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EDGE

Mega Drive ■ SNES ■ PC ■ Amiga CD 32 ■ CD-i ■ PC Engine ■ Neo Geo ■ 3DO ■ Jaguar

CD-ROM and the Silicon dream

Silicon Graphics

are creating the best

visuals in the business

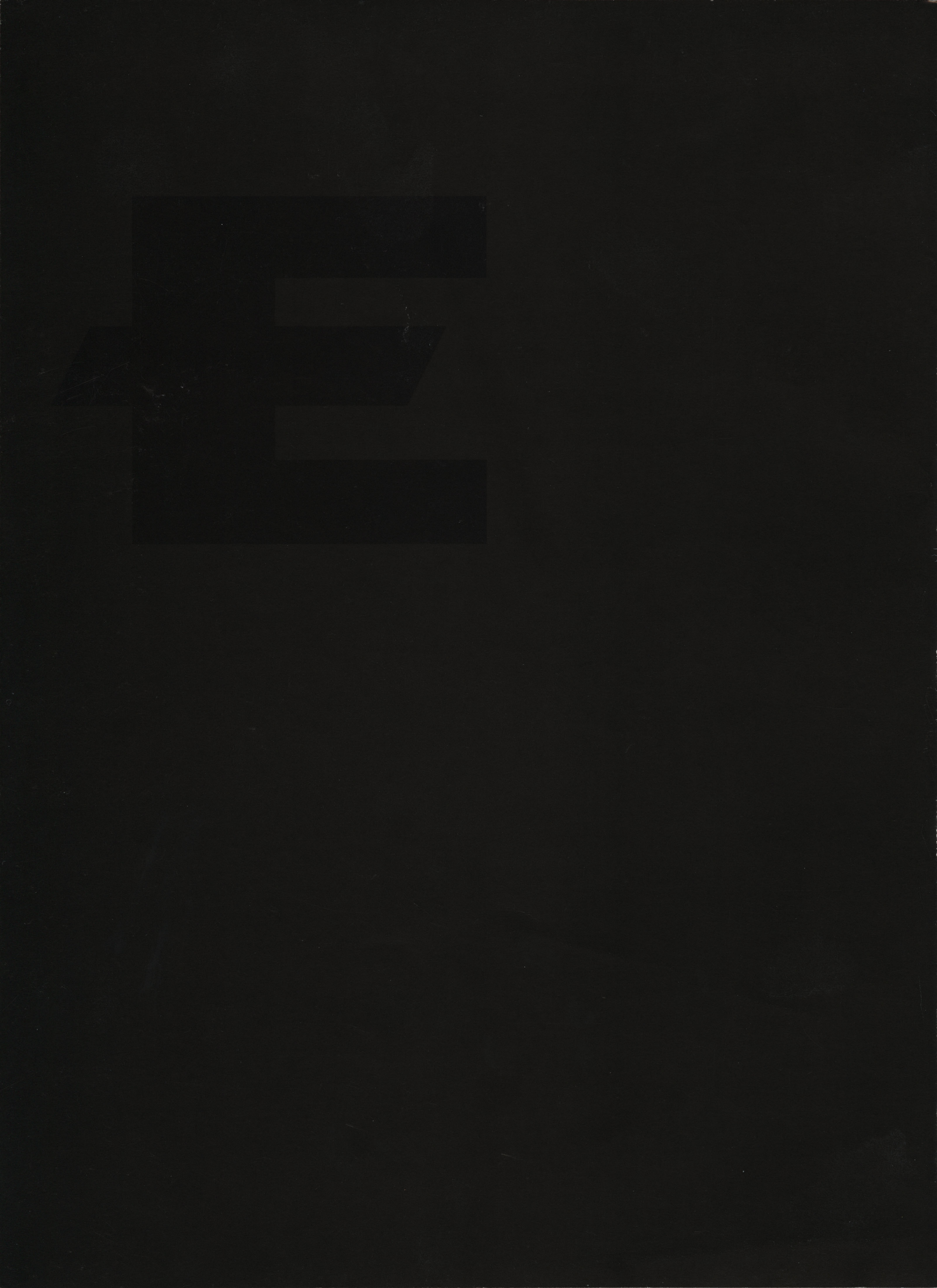
But can **CD-ROM** keep

up with the pace?



Chaos Control from Infogrames – a CD-ROM game using mindblowing 3D images rendered on Silicon Graphics workstations. The bizarre history of CD-ROM (and how it relates to games) starts on page 48. See for yourself...







Welcome to the second issue of **Edge**

As predicted, **Edge** one caused a real sensation in the videogames industry. We were swamped with congratulatory letters, telephone calls and faxes from all over the world.

Edge would like to say thankyou to everyone who took the time to contact us.

But to business.

Edge two is the first magazine to print the reality behind the CD-ROM hype.

So far few would deny that CD – the supposed medium of the future – has got off to a bad start. CD games are little more than animations with pauses, the Mega CD is floundering with no decent software, and Philips' CD-i system is only now starting to show signs of life (see Cutting Edge, page 14).

The new 3DO system and big Mega CD releases like *Thunderhawk* and *Silpheed* may lift sales, but still CD games aren't all they're made out to be. **Edge** shows you why on page 48.

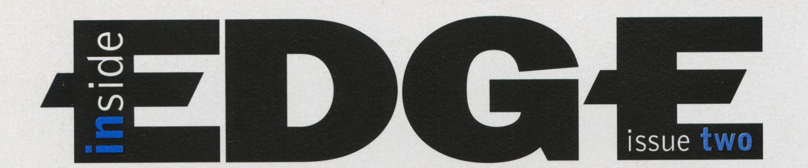
Taking a step further into the future, **Edge** looks into the realities of network gaming. What if you could get your information directly over the phone or by satellite? It's happening in Japan, in the US, and it's only a matter of time before Europe joins the information race. Be one of the first to get wired up for the first UK games network. Turn to page 70 and find out about the future of interconnectivity.

Meanwhile, many are claiming the advent of full-motion video games will herald a new era of adult software. But with CD-i games like *Voyeur* (prescreen, page 26), and CD titles like *The Joy Of Sex*, it's only a matter of time before the regulators close in. What will full certification mean for the games industry? **Edge** asks the regulators and the leading industry figures. Turn to page 62 to find out what they have to say.

And on top of all that, **Edge** two has pictures from the Jamma coin-op show in Japan, the latest news of Nintendo's entry into the 64bit gaming arena, and the totally exclusive story on Atari's stunning – yes, honest – 64bit Jaguar. The Cutting Edge begins on page 6.

Stay with it.

The **future** is almost here...



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Reproduction

Avon Scanning and Planning, Bristol

Print

Cradley Print
Warley, West Midlands

Edge is printed on
Royal Press 90 gsm

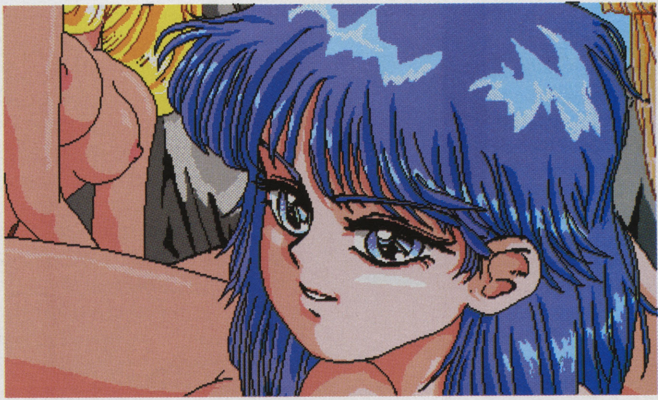
Typography (Adobe®)

ITC Franklin Gothic/**Heavy**
Gill Sans/**Bold**
Bell Gothic light/**Black**

What was the first ever arcade videogame machine? If your answer is Nolan Bushnell's *Pong*, his ground-breaking bat-and-ball tennis-like game from 1973, you would be wrong. Bushnell first created a complicated spaceships-and-aliens game called *Computer Space*, but it was too complex for anyone who tried it, so he went for something simpler. *Pong* was followed by *BreakOut* in 1974. It wasn't until 1979 that the first *Space Invaders* appeared in arcades...









insideview



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Prescreen

Not only the games you are likely to be playing next month and the month after – also, unique **Edge** insight into the people, techniques and ideas that make the latest games; including *Beneath A Steel Sky* (left)





48 Futureview

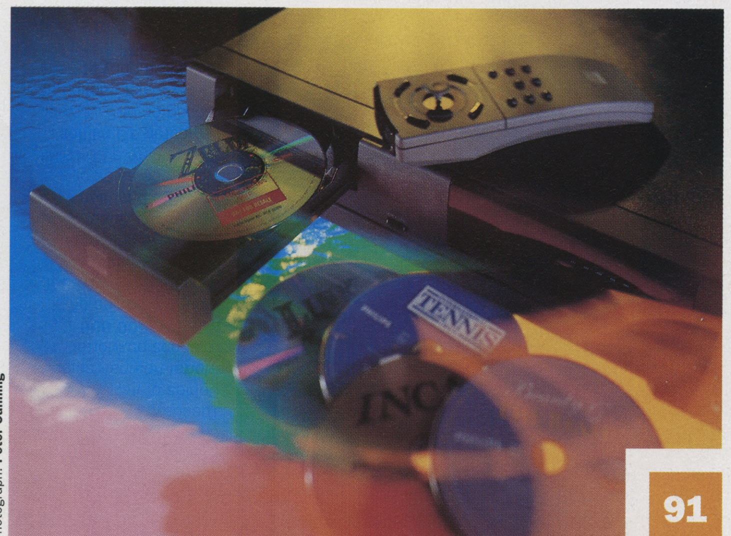
CD-ROM is universally heralded as the medium of the future. Indeed, it has been heralded as the medium of the future for the past six years, half the life of the whole computer games industry as we know it. So what's the big deal? How does it work, and what can we expect from it? Find out in this in-depth **Edge** investigation

Testscreen

The whole videogaming world distilled to an essence of perfection. This month, **Edge** puts its finely tuned measuring instruments to work with assessments of *Tatsujin 2, Thunderhawk, Jurassic Park, Street Fighter 2 Turbo, Turrican 3, Aladdin* and *Top Gear 2*



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Photograph: **Peter Canning**

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New **64bit** Jaguar from **Atari**, **page 6**... **Nintendo** signs up for **Silicon Graphics** deal for new home graphics workstations, **page 11**... **Philips CD-i** first with Digital Video cartridge, **page 14**... News from the **JAMMA** arcade show, **page 16**... Full **ECTS** report, **page 20**...



The very latest **news** from across the entire world of videogaming

Atari springs Jaguar on unsuspecting world

The next round of the technology wars has started. Commodore's Amiga CD³² is already onsale, the 3DO has upped the stakes for speed and power and now Atari are going for broke with a 64bit, 16 million colour console...

Faster than a speeding... well, Jaguar, Atari introduced hardware prototypes of its upcoming super-console and showed in-progress software to a gathering of the press on August 18th at its Sunnyvale, California offices. The press conference that **Edge** attended was headed up by Atari president **Sam Tramiel** and formally threw the gauntlet back in the face of Trip Hawkins and his 3DO.

In fact, the Jaguar press kit started off by quoting Hawkins' own introduction of 3DO: 'You have to provide a performance level that puts the stake way out there... then people don't bother to challenge it.' Atari's press release went on to say that the Jaguar's specs – which include over 16 million colours and animation exceeding 850 million pixels per second, compared to 3DO's reported 64 million – 'puts the stake way out there.' And, no surprises here either, Atari are keen to 'establish Jaguar as the industry standard for interactive multimedia performance.'

Trip Hawkins of 3DO has his own opinion of this. 'Our competitors are just forming their alliances and making announcements. 3DO was at this stage more than two years ago. We're delighted that they're taking our launch so seriously, and they think our coat-tails are the ones that will provide the best ride.'

There were announcements that caught many reporters' attention prior to Atari's press conference, and gave some credence to the Jaguar's chances in what many would call a clogged marketplace. On July 2nd, Atari claimed that it had signed a $500 million deal with IBM, in →

Hawkins hawks 3DO

Making the opening speech at the annual Sigraph computer graphics show in Anaheim, California, ten days before the launch of the Jaguar, Trip Hawkins of 3DO sounded like he was already on the defensive. He pointed out that when radio was introduced to the US, in one year 35 per cent of furniture sold in the States was radios and that, if you translate the price from those days into modern terms, each radio cost the equivalent of $1,600.

All the same, his system with its $700 pricetag begins to look a little overpriced next to a Jaguar with CD-ROM at around $400...



Can Atari really produce their 64bit Jaguar console for just $200 retail? And why have they stuck with cartridges?

Anatomy of a predator

So what's the Jaguar got inside it then? Read on...
- 64bit RISC-based processing architecture
- 106 Megabytes per second 64bit data path
- 27 million instructions per second (MIPS) Graphics Processor with 4Kbytes of zero wait-state internal SRAM
- Programmable processor/sprite engine
- 27 MIPS Digital Signal Processor (DSP) with 8Kbytes of zero wait-state internal SRAM
- High-speed Blitter GFX chip with hardware support for Z-buffering and Gouraud shading
- Motorola MC68000 CPU running at 13.3 MHz
- 32-bit graphics giving 16.7 million colours
- Enhanced JPEG-assisted ROM compression for up to 400Megabits of data per cartridge
- 16 Megabits of fast page-mode DRAM
- Optional double-speed CD-ROM drive 350K/sec
- CinePak software video decompression
- Com/Lynx I/O for networked games
- Two (expandable to dozens) control ports, supporting digital and analog interfaces, as well as keyboards, lightguns and mice
- Joypad with three fire buttons and 12-key keypad for game-specific overlays
- High-speed serial port for modem, cable TV and network connections





Sam Tramiel, President of Atari Corporation, at the US press launch of the Jaguar, which was held at Atari's spacious Sunnyvale, California headquarters (right)

which IBM would manufacture the Jaguar in its Charlotte, North Carolina, plant, taking some weight off Atari for producing and maintaining quality of the product.

Another statement in early July found Atari and the world's largest media and entertainment company, Time Warner, joining forces to offer Time Warner's extensive video library to Atari and thirdparty developers for use in Jaguar products. It's interesting to note that Time Warner is also one of the strategic partners in 3DO, offering the latter firm similar access to its properties.

'We've been waiting for our 'Betamax' to emerge, and now perhaps it is,' Hawkins added, referring to the technically superior video recorder system that somehow failed to become the established standard. 'But 3DO has what it takes to be the VHS of the interactive market.'

'The imagery just has to be seen to be believed. But wait until you see how you can interact with these images'

Sam Tramiel
President, Atari Corp.

Jaguar will be introduced to limited areas – San Francisco and New York – beginning in October at a price of $200, with rollout to the rest of the US starting in January 1994. Expectations are for the system to be available nationwide by the second quarter of 1994.

A double-speed CD-ROM drive, which looks distressingly like a toilet when on top of the Jaguar, will also be priced at about $200 and introduced in early 1994. It has a capacity of roughly 700Mb and also plays audio and karaoke CDs, CD+G discs and Kodak Photo CDs. Adding an optional MPEG 2 (Motion Picture Expert Group) cartridge will permit viewing of full-length movies played from CD. So far, so good.

But if any aspect of the hardware did seem badly designed on examination at the launch, it was Jaguar's control pad. Having a 12-key keypad is a great idea, certainly, but limiting the use of the joypad itself to three main buttons is ludicrous. What about games like *Street Fighter II* that use six buttons? Or *Smash TV*-style directional fire as on the SNES? Even 3DO has two SNES-style top buttons.

This niggle aside, the spec sheet is impressive: twice as powerful as 3DO,

What is it?

Designed by a Cambridge-based trio called Flare Technology back in 1989, and co-designed by a well known joystick firm, this console incorporated RISC-based technology and a 3.5in disk drive and was due to cost around £200...

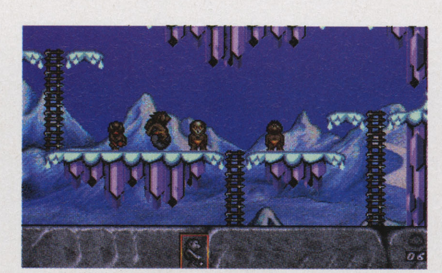
Chips down in chemical factory explosion

On the 6th August the Sumitomo Chemicals plant in Tokyo, Japan, exploded. Which wouldn't matter, except that it supplies 60 percent of the epoxy resin used in RAM chips worldwide: Hitachi and Toshiba are expected to run out by October if a fresh supply isn't traced. And the world price for DRAM is now higher than ever. Something that many thought would affect 3DO's and Jaguar's launch prices.

Continued next page



So, you've got your Jaguar. And what do you get to play on it? *Humans*. Not a good start



But then, it's not a bad little game really. And it'll certainly be fast. Blimey, can't wait



Now, we'd hate to suggest *Kasumi Ninja* reminds us of anything. But it does





Bob Brodie, Atari's Director of Communications (left), and Juli Wade of Atari (right) holding the fashionably toilet-like CD-ROM drive on top of a Jaguar console

it is...

The Konix console... from Wales.
Touted as the UK's answer to the emerging presence of the Japanese consoles, this powerful (at the time) but flawed concept machine failed to appear, leaving Konix with big debts.

← according to Atari.

As **Edge** one reported, Atari used its Cambridge facility to design the chips that power the system. Two custom chips, Tom and Jerry (Atari always had a flair for naming chips) contain four of the five processors in the Jaguar; a 68000 is also on board for varied purposes. **John Skrutch**, Atari's director of software development in the States, told **Edge** that you could take one of the Jaguar's processors, say the sound processor, and turn it loose for another task, such as graphics calculations.

The power of the of the Jaguar in creating software is immediately apparent. Atari claims the system is built for special effects such as morphing, warping, texture mapping, transparency and multiple lighting sources. The same kind of effects that 3DO is claiming their system can do, in fact.

However, it has to be said, much of the software on display at the launch looked pretty dodgy in the early stages. Here's the opening slate of software releases that Atari has in the works:

Trevor McFur in Crescent Galaxy – A 'shooter' with an original title, this one features simultaneous twoplayer action with some impressive 3D rendered (but tacky-looking) parallax scrolling graphics. There are nine levels featuring five different worlds and there's definitely some evidence of lots of colours in there. Unlike...

'We're delighted that they think our coat tails are the ones that will provide the best ride'

Trip Hawkins, President, 3DO Company

Raiden – Yes, it's that old vertically scrolling coin-op that's appeared on the Super NES (an appalling conversion), Mega Drive (pretty good), the PC Engine (even better) and on the PC Engine Super CD ROM² (virtually coin-op perfect). So why are they bothering to port it to the Jaguar? The words straws and clutching immediately spring to mind.

Cybermorph – In a rather similar vein to *Starfox*, you have to fly over the terrain and blast anything that comes into your path. However, John Skrutch told **Edge** the difference between the two games is that *Cybermorph* takes the plane 'off the rails,' allowing the pilot to fly anywhere, rendering →

3DO Japan helps developers

Continued

The Japanese wing of the console-creating US firm is offering software developers a free library of 200 CD-ROM discs full of software tools and audio-visual data.
The idea is to speed up the development process and lower the cost, so that more developers are willing to get involved, as well as to ensure that programming guidelines are followed, thus ensuring quality.
3DO Japan also have an online support network and a fax-based information service.

VideoCD standard set

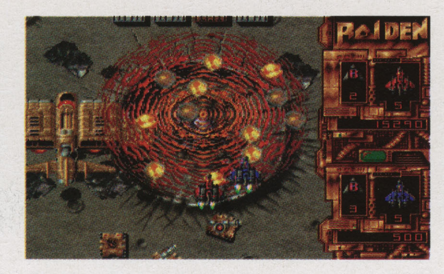
Electronics megacorps Matsushita (Panasonic), Philips, Sony and JVC have agreed on a standard VideoCD logo which will appear on all products that use the new digital video system. This is the same idea as the CD logo we all became familiar with on hifi CDs and is meant to reassure customers that they are buying a standard product that will work on their machines.

The standard has only been known up to now as MPEG 1 full-motion video (FMV), and is set to appear in 3DO, Commodore's Amiga CD³², Philips' CD-i (see page 14) and Atari's Jaguar (see page 6). All these machines will probably carry the VideoCD logo eventually, though for most of them VideoCD will come as a £200 addon to the standard system.

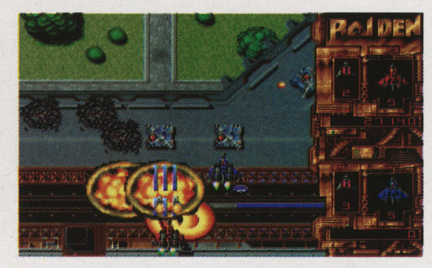
Videos on CD have obvious appeal, but the technical problem is that when you try to put 50 frames of video data on screen every second, the CD-ROM drives cannot shift data quickly enough. The MPEG 1 standard is a set of chips which compress the data on the CD and decompress it for the TV to display. Its use means that 74 minutes of video with stereo sound can fit on a normal 12cm (5-inch) CD.



Now this looks more like it, doesn't it? *Crescent Galaxy* – an attractive shoot 'em up



Raiden – apparently, the Jaguar version will be the closest conversion yet seen...



Why then, is there a big brown ST-style panel on the right side of the screen? How strange



Crescent Galaxy, one of the better-looking Jaguar games from this initial batch, features side-on scrolling rendered parallax graphics

3DO online for October

Already, 317 developers have signed up to create software for 3DO, though only a handful is likely to be actually onsale on the projected launch date.

'We expect at least eight titles to be available in October,' says Panasonic's Richard Lovisolo, 'with many more becoming available throughout the remainder of the year.'

One title that will definitely be finished, however, is Crystal Dynamics' *Crash and Burn*, (see Edge One) which will be bundled with the Panasonic REAL 3DO machine when it goes onsale. 'The first Panasonic multiplayers will be delivered to dealers in late September and will be available to consumers on October 4th', Lovisolo promises.

the landscape on the fly. The 3D update is exceptionally smooth in this title.

Club Drive – A driving game based around a 21st Century theme park where all the cars are indestructible and the terrain is uncompromisingly rough. Different levels are represented by detailed 3D polygon environments such as a futuristic city, a Wild West town and even a scaled-down toy car world where you race around your living room dodging furniture.

Checkered Flag II – A Formula One racing game also using 3D polygons. This promises lots of speed, and all of the cars, buildings and roads are rendered in true 3D with lots of options, such as to customise your car.

Tiny Toon Adventures – Nothing to do with the Konami game on the SNES and Mega Drive (and nowhere near as pretty either), this features some side-on platform action.

Aliens vs Predator – Bringing together two of 20th Century Fox's movie bad guys, this game's graphics were demonstrated as evidence of the Jaguar's power. The player navigates through texture-mapped, scaling hallways in smooth 3D perspective.

Kasumi Ninja – Well, they had to have an *SFII* clone in here somewhere, and in a description that smacks of exactly that, Atari claims that warriors can pick from '91 different martial arts movements'.

Tempest 2000 – Need we say any more? In a recreation of the wire frame arcade game from a zillion years back, the Jaguar version is identical. That is, apart from a starfield background and another 50 levels.

Evolution Dino Dudes – Things are getting desperate. This one is actually Mirage's *Humans* retitled and revamped. At this stage there seems little evidence of all those extra colours, despite Atari claims of 'vivid colours and creative use of animation facilities.'

Though Atari announced a lot of interest from third party developers, it held off comment until the middle of September on exactly what licences it had signed. It's natural for there to be interest in the Jaguar from software developers because of its low cost. No doubt, with the amount of →

On release this month

22 Mega Drive games reviewed in: MEGA

Highest rated: **Street Fighter II** 92%
Lowest rated: **Bart's Nightmare** 35%

24 PC games reviewed in:



Highest rated: **NHL Hockey** 80%
Lowest rated: **Pinball for Windows** 39%

20 SNES games reviewed in:



Highest rated: **Jurassic Park** 89%
Lowest rated: **Arcus Odyssey** 52%

32 Amiga games reviewed in:



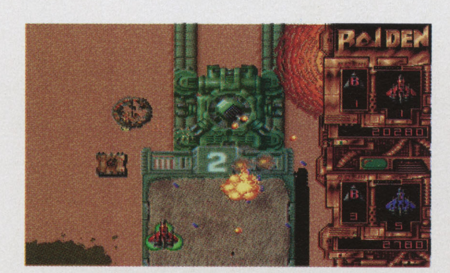
Highest rated: **Micro Machines** 88%
Lowest rated: **Napoleonics** 22%

BUZZ words

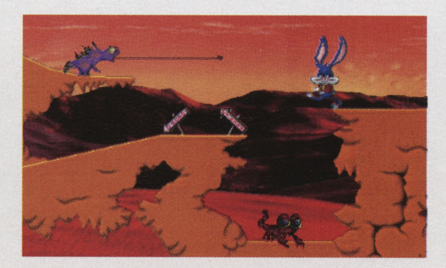
Multimedia

' It's like amazing what **multimedia** will mean it's like a new form of videogame and music and cinema all rolled into one it's like going to a movie with your walkman on and shouting all the way through the film yeah it'll all be on CD you just bung it in the drive and interact with it yeah totally crucial... '

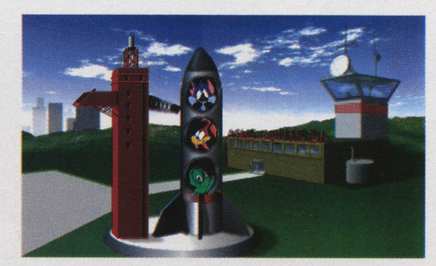
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Hey, more sexy *Raiden* shots. How does the Jaguar handle all those shades of brown?



Tiny Toon Adventures has a few more colours though. Things are improving. A bit.



You never know, this might as good as the Konami games. But then again, it might not

head to head

'We believe that we have taken a more substantial jump than 3DO has in bringing a better and more affordable entertainment experience to the consumer market'

Sam Tramiel, President, Atari Corporation

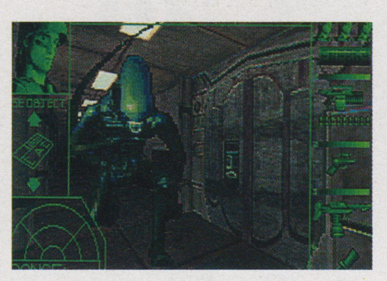
'Our competitors are just forming their alliances and making announcements. 3DO was at that stage more than two years ago. We're delighted they are taking our launch so seriously'

Trip Hawkins, President and CEO, The 3DO Company

Talk back

'I would be hard pressed to name a single decent CD game. I wouldn't say the first batch of CD games have been disappointing. I'd say they've been shite.' **Peter Molyneux, MD of Bullfrog, speaking frankly about CD-ROM gaming. (Full Edge report on page 48).**

'The multimedia interactive consumer is going to want lots of interactivity. Lots of digitised Stallone and Schwarzenegger. He might buy a £9.99 Playboy disc as a bit of light relief, but that's all' **Tim Chaney, MD of Virgin Games, on the future of CD porn (full feature, page 62).**



One of the better Jaguar games – *Aliens Vs Predator* – with smooth 3D graphics

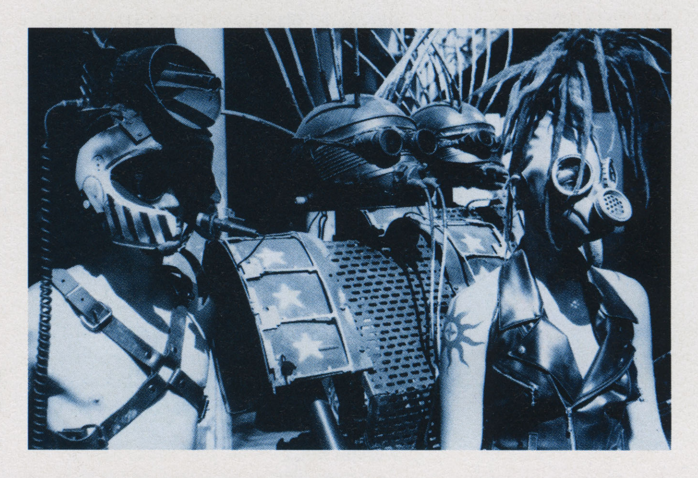
← time it will take to create the new generation of games for 3DO, CD-i and the PC, the Jaguar will provide another platform for spreading out development costs.

Additionally, the Jaguar development system is very inexpensive: about $9,000 compared with the 3DO's $30,000. The development system consists of an Atari TT personal computer with custom tools, but Atari has dropped its long-time 'Atari-only' policy, so there's a PC-based development station available as well, and there is a lot of development using Mac-based tools.

Atari plans to introduce Jaguar into the UK next spring. Could the cynics be right in saying it will follow Lynx and Falcon on the endangered species list? Stay with **Edge** for more news...

Cyberpeople gather in London

The Cyberseed event taking place in London on October 8th and 9th is set to be a pretty strange affair. It's basically a festival of fun for all things cyberpunk based around audiovisual experiences, and will include state-of-the-art virtual reality systems, computer graphics, film special effects, electronic gaming systems, comics, robots, cyber-fashion, street art and computer art, and all kinds of other things. All in all, multimedia gone mad with lots of great music and visuals, plus loads of people wearing silly clothes. Get yourself down to to Bagley's Studio, York Way, King's Cross, London N1 on the dates above to take part.



Attract mode

This is a regular spot for Edge to show off the best ingame intros around.

The brilliant LucasArts PC game, *Day Of The Tentacle*, is a weird and wacky RPG adventure, laden with surreal humour, and with more than a touch of the American B-movie. The intro introduces the hero, Bernard (nickname: B-Man), and his mission – to save the world from the evil Purple Tentacle...



1 **(Scene 1) An idyllic country scene in small-town America. Here a bird slowly flies across the screen and grins at the player. The graphics are big, chunky and styled to give a Hanna Barbera/Flintstones, cartoony feel to the action**



2 **(Scene 2) The cartoon bird suddenly chokes and falls from the sky as we approach the poisonous stream outside the Edison's Motel. Now the two tentacles arrive, squelchily. Purple Tentacle moves up to the river to take a drink of the foul water...**



3 **(Scene 3) Purple Tentacle drinks the toxic water. 'It makes me feel more powerful, more aggressive...' he boasts, but starts convulsing strangely. When he revives he has sprouted small stumpy arms. 'I feel I could take on the world...', he declares**

Nintendo super-machine for 1995?



The Silicon Graphics Indy – 100MHz R4000 processor, 16Mb RAM, and on the road for only £4,350. A scaled-down SGI/Nintendo games machine is planned

You may not be that familiar with Silicon Graphics Inc (SGI), but you surely know its impact on modern entertainment. The high-end computer and graphics company has done special effects for *Terminator 2* and *Jurassic Park*, among its many movie and TV credits.

It also recently released a RISC-based desktop workstation called Indy that reportedly can emulate an Apple Mac or a PC, as well as featuring its own desktop environment called Indigo Magic – a media-rich point-and-click interface destined to enhance the development of home entertainment software.

Now, imagine for a minute that this kind of graphic power was available in your arcade or living room for games.

That was exactly what was announced at the joint press conference between Nintendo and Silicon Graphics that **Edge** attended in San Francisco on 23rd August. 'Project Reality', as Nintendo is calling it, will result in arcade products in 1994 and a home-based machine in 1995 (retailing at a suggested price of $250).

'Together, Silicon Graphics and Nintendo make a dramatic step forward', said **James Clark**, SGI's chairman.

On the face of things, Nintendo's move is typically, well, Nintendo. Its previous announcements of joint projects with Philips and Sony were, in hindsight, little more than bold promises that failed to bear fruit. And with Saturn, 3DO and Jaguar all jostling for position it was only a matter of time before the big 'N' entered the race.

But supposing this set of promises does result in something. What exactly will Silicon Graphics provide for Nintendo? MIPS technology, that's what.

MIPS Technologies is a chip designer and manufacturer that was bought by SGI last year, and it will provide a version of its Multimedia Engine amounting to a 64-bit RISC microprocessor, graphics co-processor chip and Application Specific Integrated Circuits (ASICs) for specialised audio, video →

Who is it?

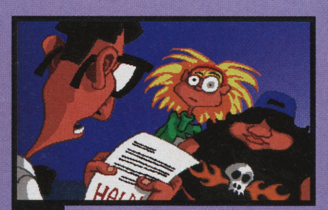
This person started out as a systems engineer and then realised he could make more money writing games. And not just any old tat, either. He's created some of the most engrossing and brilliantly designed 3D games ever...

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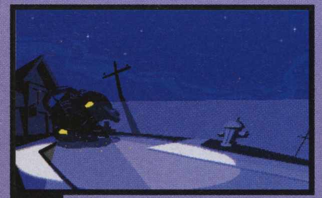



***Jurassic Park*'s dinosaurs relied on Silicon Graphics hardware to bring them to life – now imagine these special effects on a Nintendo home system**

4 **(Scene 4) Meet Bernard's friends, Hoagy and Laverne. In this scene they open the door to find a small hamster clutching a note. Hoagy, a drummer in a heavy metal band, suggests biting off its head in tribute to Ozzy Osborne. Laverne suggests a dissection...**



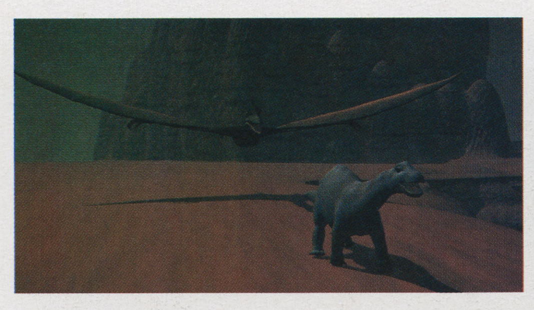
5 **(Scene 5) The eminently practical Bernard arrives and recognises the hamster. It belongs to 'Weird Ed' Edison up at the Motel, he says. He reads the note – it is from Green Tentacle who complains that he and Purple have been tied up by Doctor Ed**

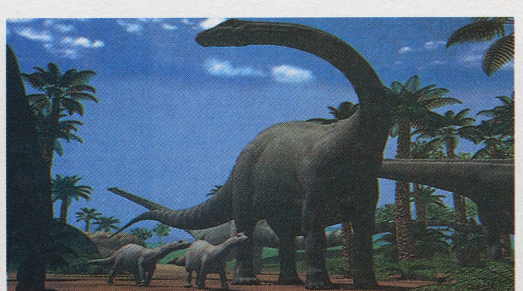


6 **(Scene 6) Bernard seems reluctant to head off for the Motel – he has had dealings with the Edisons before – but we don't learn more about this 'til much later. The kids finally get in Bernard's car and head for the Motel. They crash when they arrive**



7 **(Scene 7) The end of the intro leads straight into the game. Here the kids decide to search 'commando-style' and Hoagy heads off upstairs and Laverne goes into the hall. Bernard is left alone in the lobby. Within seconds they are lost. Game on...**





A selection of shots from the *Pterodactyl Flight* ride – one of the interactive simulations on display at Sigraph '93. Three people could sit on top of giant plastic Pterodactyls in front of enormous screens



Silicon Graphics' extra power allows complex textures and shading to be rendered at very high resolutions

it is...

Geoff Crammond, programmer of classics like *Revs*, *The Sentinel*, *Stunt Car Racer* and Microprose's superlative driving sim, *FI Grand Prix*. Geoff's next secret project is being written for the PC and features more racing cars...

Cable going crazy

The limitless uses for a digital system like a computer or games console tied in with a cable TV network are causing a degree of panic in a wide range of US entertainment, technology and telecommunications firms.

Bill Gates of Microsoft (who created the Windows operating system for the PC) recently expressed his amazement at 'the feeding frenzy or the gold rush' that is currently going on in these industries.

Firms are afraid of missing out if they don't jump on the bandwagon now. Already, a system has been put on trial in the States which uses the MPEG video compression standard to offer viewers a choice of movies from a list of hundreds.

See Edge's feature on page 70 for the latest on interactive network gaming.

Continued

← and graphics. Or 'Reality Immersion Technology' as both parties are calling it.

When quizzed by **Edge** about the announcement, **Dave Corbin**, director of marketing for MIPS, commented, 'SGI is a world leader in graphics. The ability to provide games that really are a step beyond, SGI is the best place to make that step. The other companies have to develop *upwards*, while SGI already has this technology on high power computers and just has to evolve that into a lower cost package. Nintendo clearly has the straight manufacturing capability for that kind of graphics product at that price.'

But with a clock speed in excess of 100 MHz and with 24bit colour super-high resolution images, Project Reality sounds unrealistic in the light of the $250 potential price figure Nintendo has mentioned.

After all, the new Silicon Graphics Indy workstation (see picture), which delivers this level of specs, costs in excess of £4,000.

Corbin notes, 'the arcade system will be a repackaging of workstation technology in a cabinet. The home system will be similar – it'll have the same roots, but it almost certainly won't be as powerful because of the lower price.'

However, what hasn't been revealed at this stage is the path Nintendo will take towards finding a suitable means of data storage for the system. The inefficiency of CD-ROM is often levelled as one of the biggest factors that has kept Nintendo out of the technology race so far.

Howard Lincoln, Nintendo of America's senior vice president, enthuses on the more concrete details of the new announcement. 'Nintendo's Project Reality dissolves the current limits of video play, causing the world to challenge what its notion of a videogame can be. Our work with Silicon Graphics enables us to actually skip a generation by driving straight through to true 64bit, 3D video entertainment.'

But you can't drive straight through to 64bit when someone's already beaten you to it. In this case, Atari who will be the first company to deliver 64bit technology for the home user when its Jaguar system debuts this October in parts of the US.

And bits aside, what about the impending might of 3DO? **Trip Hawkins**, president and CEO of 3DO, has his own opinion: 'Nintendo made their bed and now they'll have to lie in it. They have proven to be a great toy company but they are way out of position to compete in the new multimedia market.

'Even if they turn up the heat on technology', he notes, 'Nintendo isn't going to change its licensing practices overnight. They are still the evil monopolist and we are the fair new wave.'

But 3DO is still evidently not quite fair enough to prevent $4·50 being instantly wiped off its share price when the news of Nintendo's Project Reality escaped...

Two weeks before Project Reality was announced, the 20th annual Sigraph Conference – a major exhibition for advanced computer graphics – took place in Anaheim, California. Naturally, **Edge** attended.

The 28,000 people who also made it to the show were a good indication of the current fascination with computer graphics.

Sigraph stands for the 'special interest group on computer graphics and interactive techniques', and the theme of the 1993 conference was 'The Eye of Technology', →

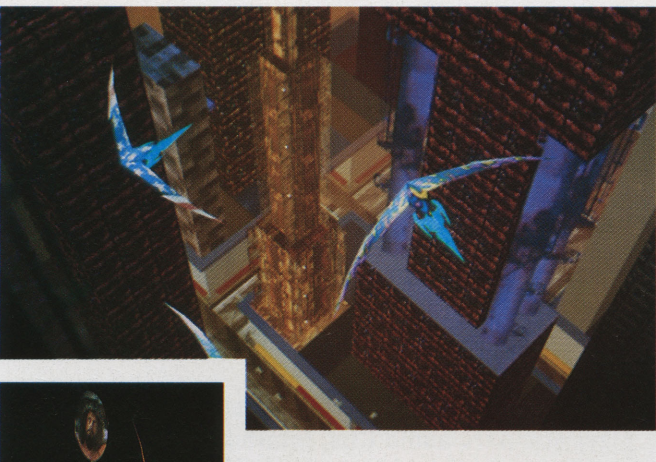


***The Labyrinth* – a bizarre journey through space in control of Daedalus – one of the exhibits from Sigraph '93**

Data stream

Maximum no. of colours displayed by Amiga CD32: **262,000**
Maximum no. of colours displayed by Atari Jaguar: **16,777,216**
Price of Team 17's *Alien Breed* on CD32 disc: **£14**
Price of Sega's *Night Trap* on Mega CD disc: **£50**
Copies of *Sonic 2* 'shipped' to UK shops on launch day of *Sonic* Tuesday: **1 million**
Copies of Acclaim's *Mortal Kombat* 'shipped' to shops on Mortal Monday: **500,000**
Worldwide sales of Michael Jackson's BAD album: **14 million** [1]
Worldwide sales of Nintendo's *Super Mario Bros 3*: **15 million** [2]
Worldwide sales of Commodore's C64 8bit computer: **13 million** [3]
Proportion of 5-11 year olds who list gaming as favourite hobby at home in 1993: **37%** [4]
Proportion of 5-11 year olds who list reading as favourite hobby at home in 1993: **32%** [4]
Proportion of 5-11 year olds who listed reading as favourite hobby at home in 1933: **52%** [4]
Size of the UK video games retail market at the end of 1992 has been estimated at between: **£700 million to £900 million**
Compare this to figures for chewing gum: **£200 million**, cinema visits: **£300 million**, batteries: **£395 million**, snacks: **£573 million**, video rental **£600 million**, and video sell-through at **£200 million.**
Worldwide turnover of Electronic Arts in 1992: **$300 million** [6]
Number of magazines sold by **Edge's** publisher Future Leisure in a month: **850,000+** [7]
Copies of **Edge** Two printed: **46,070** [8]

Sources [1] A&M Records [2] Nintendo [3] Commodore [4] Bird's Eye Youth Trends Survey 1993 [5] Steve Carey in *CTW* 06/9/93 [6] *CTW* 06/9/93 [7] Greg Ingham [8] A nice young lady in production



Hang-glider Flight (top) – an amazing real time virtual reality flight sim from Evans and Sutherland. And (above) VR computerised confessionals

Nintendo in planes and hotels

You must, surely, have seen a mention of the Nintendo Gateway system by now. It's a new system they've flogged to all the airline and hotel companies. It offers old SNES games, onscreen shopping and a choice of movie or music.

And, according to the scenario sketched up by the press release, what a nice world it will bring. Follow our hero Dan as he tests it. 'Dan had heard enough from [his son] Cam about how cool the Nintendo game *Pilot Wings* was. Dan figured 90 minutes of practice here in his seat would allow him to sit down when he got home, take control of his R Wing fighter on the livingroom screen, and impress his son with the fact that the old man wasn't over the hill yet.' Barf.

← providing attendees with the opportunity to experience state-of-the-art advances in graphics, multimedia and interactive work...

The conference opened with an address by **James Cameron**, director of *Aliens, The Abyss,* and *Terminator 2* – and also co-owner of Digital Domain, a full-range special effects house that includes both computer imaging and traditional animatronics.

Digital Domain is currently at work on a huge Terminator 2 multimedia attraction for the Universal Studios Tour, as well as the effects work for films like Cameron's new Schwarzenegger comedy adventure, *True Lies,* and Neil Jordan's upcoming film, *Interview with a Vampire.* Cameron mostly spoke of a new relationship that must be established between film directors and special effects.

After the speech, in the three main exhibit halls exhibitors demonstrated their latest products. It seemed that almost everyone had new morphing and special effects software programs for Silicon Graphics workstations.

Of particular interest to **Edge** were the virtual reality exhibits produced by special effects software house Evans and Sutherland.

Pterodactyl Flight and Hang-glider Flight were very impressive and exciting enough to keep three thousand eager participants queuing for over forty-five minutes. The object? To lie in a sling with your rear in the air and your head in a box, to experience a five-minute sensation of gliding through canyons and a towering metropolis. What was it like? Let's just say the forty-five minute wait was well worth it.

The buzzword for Sigraph '93 was 'desktop', and there were several new platforms unveiled that allow a single person to produce high quantity animations.

In one finished module, called *Labyrinth,* by Fred Truck and Electric Bank, a participant could navigate an ornithopter through a 3D slice of a 4th dimensional manifold using a DataGlove and a head-mounted display.

Next year, Sigraph will include a **VRoom** where new trends in virtual reality will be shown. But you'll have to make your way to Florida for all that – Sigraph '94 will hit Orlando in the last week of July. E

Bad press

Only the small-minded are slaves to consistency, so this time Edge looks at what people are saying about gaming and health...

Sega game could cause eye damage

Virtual Reality seems to be the subject of particular concern for anti-game technology Luddites, with this piece by Steve Connor and Susan Watts in the **Independent on Sunday** leading the field.

"A new toy that allows children to play computer video games in 'virtual reality' could permanently damage their eyesight.

"Mark Mon-Williams, an optometrist, said that people who used the headsets for ten minutes showed similar visual disturbances to those who spend eight hours at a computer screen. "It's amazing what you are asking your eyes to do inside the headset," he said.

"Of 20 young adults who took part in a 10-minute test, 12 experienced side-effects such as headaches, nausea and blurred vision. Mr Mon-Williams said that a particular concern is that the headset puts a lot of strain on binocular vision, which is fully developed in adults but is more liable to break down under stress in children under 12 years, causing squints."

Indeed, any **Edge**person who has tried it might already be aware that VR can cause unpleasant feelings, as the IoS goes on to report: "A form of travel sickness is affecting people who spend too long in a virtual environment. Symptoms such as nausea and disorientation are brought on by the slight time-lag between people moving their head and the scene they are immersed in 'catching up.'"

source: Independent on Sunday 05/9/93

Parents given warnings

An intelligent and balanced leaflet has just been produced by the National Council for Educational Technology to advise parents about the possible effect of videogames on their kids' health.

"There are some good things about video games," the leaflet begins. "Children learn to think and act more quickly; they will concentrate for longer and develop their attention span; they learn from their experience, changing the way they play in order to win or get a better score."

The leaflet does go on, though, to warn of problems with violent or sexist games, kids who play too much and photosensitive epilepsy. Copies can be obtained from the address below.

source: NCET, 3 Devonshire Street, LONDON W1N 2BA

Interested in making it to the world's biggest computer graphics show – **Sigraph '94**? Find out more on; 010 1 (312) 2321 6820

Philips' CD-i first with Digital Video

PHILIPS

Philips CD-i is turning into a machine to watch. It plays standard audio CDs, interactive CD-i discs, and now, with its £150 Digital Video cartridge, it's the first to offer videogamers full-motion video capabilities. So is the Philips DV cart really the thing to resurrect the fortunes of CD-i? Edge talks to the Philips crew to find out



The CD-i version of *The 7th Guest* uses full FMV



***Striker* – a big SNES soccer game – on CD-i**



Philips' stunning FMV version of *Microcosm*



***Inca*, a mix of puzzles adventure and animation**



The film-quality *Voyeur*, due for FMV treatment

Philips is preparing for a big autumn push. And it's a bit of a race against time. All the manufacturers wanted to be the first to offer a machine with full-motion video capabilities, but it looks like the Philips DV cartridge, due out in October, will be the first on the market. To prepare for this, a new, low-price Philips CD-i machine has just gone onsale.

At £400, CD-i 210 is a sleeker version of the 220, although the internals remain the same. The older 220 model is still available at £500, but now comes bundled either with *Compton's Interactive Encyclopedia* or a games pack consisting of *International Tennis Open*, *Palm Springs Open*, *Battleships*, and *Tetris* .

The FMV cartridge, due for release on October 2nd, costs £150, and gives any CD-i player the ability to show Digital Video CDs – effectively movies on disc (or, more often, discs). It also allows gamers to play new FMV titles like *7th Guest* and also boosts the CD-i's memory to 2·5Mb, allowing non-FMV titles of greater complexity.

A demonstration of the latest Video CDs had **Edge** eating its words ('VHS has little to fear [from Video CD]' – **Edge** 1). Clips of Top Gun and Apocalypse Now were sharp and colourful with audio to match. Perfect freeze frame and variable speed slowmotion are just a few of the in-built options.

Backed by a £3 million TV ad campaign, Philips hopes that this new activity will put CD-i back on the map.

'The new price reflects our determination to make CD-i a true massmarket proposition,' said **Simon Turner**, director of Philips Interactive Media Systems (PIMS). 'We now have the right machine at the right price, the right distribution and soon an important new feature in Digital Video. Anyone planning to buy a CD player this autumn would be a fool not to consider buying a CD-i player instead.'

'Anyone planning to buy a CD player this Autumn would be a fool not to consider a CD-i player'



Simon Turner,
Director, Philips IMS UK

Strong words, but Philips are still marketing the unit as an allpurpose machine: CD-i products are esoteric at best and FMV is a further outlay of £150, so there are still plenty of fools who will be quite happy with a £200 CD player.

However, help with CD-i's market presence is coming in the shape of Samsung and Goldstar-branded CD-i units. They will soon be onsale in Korea, but plans for UK distribution are unknown.

'We'd see them as competition,' CD-i software marketing manager

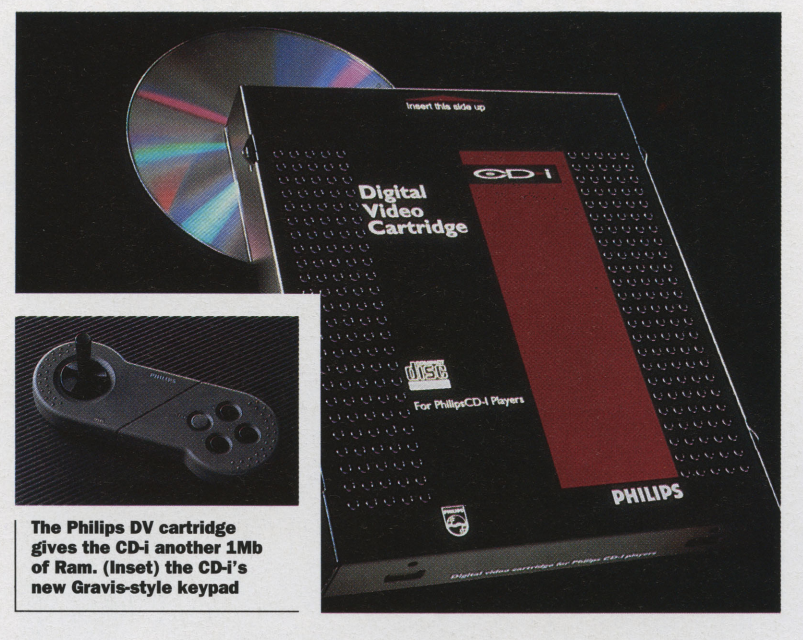
FMV passnotes

MPEG stores image data by handling pixels as groups – like attribute squares – and assigning values that fully describe that group of pixels. Only key frames are stored in their entirety: successive frames are described simply by changes in the image between the key frame and later frames.

MPEG 1 (Motion Picture Experts Group) standard decompression can cope with up to 2Mbit/second. MPEG 2 handles 2-10Mbit/second, but requires double density disks and much higher quality lasers.







The Philips DV cartridge gives the CD-i another 1Mb of Ram. (Inset) the CD-i's new Gravis-style keypad

Tessa Moore admits, 'but it helps the cause of CD-i, and of CD-i software in general – because Philips is very much involved with marketing and distribution of software. A lot of consumer electronics marketing is about waiting for your market to grow.'

With realisation of the importance of games to the success of their machine, Philips' are about to release a whole batch of new CD-i games, a new Touch Pad controller, and their publishing arm has been reorganised to concentrate on games titles.

Tessa Moore again: 'I think we say that entertainment is the way forward, rather than strictly games. Although we realise that if we are going to be seen as a games player then we really have to bump up our games products. We'd be first to admit that some of the titles we put out weren't strong enough to sustain CD-i as a games player.'

To redress the balance, Philip's ACE (Advanced CD-i Entertainment) production facility in Dorking is responsible for converting five videogames to CD-i: *Microcosm*, *7th Guest* and *Striker* are being recoded in-house, while *Lemmings* is being handled by DMA, and Gremlin are producing a CD-i version of *Litil Divil*.

In line with their new stance on games – sorry, entertainment – Philips now fully consider themselves as developers and will be sourcing new games for CD-i and other CD formats; PC and Apple CD-ROM and possibly Mega CD and Amiga CD32.

Of course, CD-i games are only as good as the player. 'To be as honest as possible, CD-i has some problems,' confirms **Lance Mason**, executive producer at Philips ACE. 'It's not ideal as a platform for games: the processor speed [a custom 68070 at 15.5MHz] could be faster and we'd all be happier. But it hasn't been fully explored for games, so I'd like to reserve judgement until we've actually tried a few things.'

And CD-i does have some major saving graces: unlike some other CD-based machines, it now has fully functioning FMV (used to stunning effect in *Microcosm* and *The 7th Guest*), 24-bit graphics and the excellent Run-Link 7. According to Lance this 'wicked screen mode' uses hardware graphics compression to generate smooth high-speed scrolling, even with bitmap images. Shame no-one's used it before, really...



On CD extra care has to be taken with sound. Philips ACE has an impressive studio, which is soundproofed to BBC broadcasting standards. They're hoping to invest in equipment to turn it into a fully-fledged 16-track digital recording studio, which would give them the capacity to add Dolby Surround soundtracks to their games.

Audio engineer Gail Cooper compiles and edits music and sound effects and timecodes everything so that they can be synchronised to the visuals. Samples are stored on a Sony 7030 DAT player and are mixed and edited using a DDA S-series mixing desk with CuBase sequencer and Sound Tools digital editor running on an Apple Macintosh Quadra network.

Voyeur to get FMV

One of the most outstanding games so far for the CD-i is *Voyeur*, a kind of interactive thriller in which you have to destroy the election campaign of a nasty would-be US president.



According to the producer of the game, David Riordan, Philips' next step is production of a full-motion video sequel to *Voyeur*. As he modestly told Edge; 'The sequel will amaze people... it will be full-motion video, it will be a real movie this time.'

It sounds good. But is it too good to be true? Time will tell...

Where is it?

It's holds the largest gathering of videogame companies ever to assemble under one roof in the USA. And last summer The 3DO Company stole the show. Next January, the boys at Atari hope to do exactly the same...

CD-i passnotes

There are around 85 CD-i titles available in the UK and Philips expect this to increase to over 100 by the end of the year.

Philips claim that *International Tennis* has sold around 5,000 units since its launch in August. And that's a very respectable figure.

Philips claim to have sold 15-20,000 CD-i players in the UK over the last year. Philips' own projections place CD-i sales at 2-300,000 worldwide by the end of '93; 600,000-1 million by the end of '94.

With the approach of 32bit and even 64bit multiplayers, Philips are tight-lipped about CD-i 2. However, they do go to lengths to explain that any further enhancements will be in the form of plug-in modules, so that even the oldest CD-i players won't become obsolete.

Continued next page

New wave graphics dominate AMS '93



All the big names in coin-operated arcade videogames were in attendance at the 31st Amusement Machine Show in Tokyo, Japan, showing off the machines we can expect to be playing next year. The next generation of 3D graphics dominated the Show

Last month, all the top names in arcade machines gathered in Tokyo to show off the new machines we will be playing next year. 3D graphics dominated the event, and of course Edge was there to sniff out full details of the latest coin-ops...

it is...
The Consumer Electronics Show in Las Vegas, Nevada, on January 6th-9th 1994. Atari are expected to use next January's premier show for all things electronic as a launch platform for their Jaguar 64bit console.

Ridge Racer* from Namco is the most exciting example yet seen of the new era of texture-mapped 3D graphics, knocking spots off Sega's *Virtua Racing

Every major player in coin-operated videogames proudly unveiled their latest bids for domination of the worldwide arcade scene at the 31st Amusement Machine Show last month.

Held at 'Makuhari Messe' in Chiba city on the outskirts of Tokyo, this premier event is sponsored by the Japanese Amusement Machine Manufacturers' Association (JAMMA) and attracts about 40,000 visitors in three days. JAMMA's membership reads like a who's who of the arcade industry, with top brass from the likes of Namco, Capcom and Konami all playing a major part in the Association. But this exclusive club is probably best known for introducing a worldwide coin-op standard to connect monitors with circuit boards. Although the second day of this year's show business was virtually wiped out by a typhoon that brought severe flooding to the whole region, that brief hiccup didn't worry the people at Sega. Their pride and joy, *Virtua Fighters* and *Dragonball Virtual Reality,* even managed to outshine *Super Street Fighter II* and *Fatal Fury Special.*

These heavyweight sequels merely sported a few new characters and a superficial facelift. Perhaps Capcom and SNK will try to muster a few original ideas next time, too?

Virtua Fighters, on the other hand, was a tantalising glimpse into the future of fighting games employing the same →



***Ridge Racer* texture-maps detail on to 3D polygons at great speed**



Quite obviously aimed at small kids, *Polynet Warriors* is Konami's entry into the fast-expanding 3D arena. This variation of *Faceball 2000* is the kind of game you really hate to lose

EA ditch Nintendo

A shock announcement from Electronic Arts has stated that they are suspending the release of forthcoming Nintendo titles, claiming that publishing for Nintendo is not economically viable.

EA blame the strength of the Yen in international exchanges and the high cost of manufacturing Nintendo cartridges, which is related to the licence fee Nintendo charge.

Four EA games are finished and ready but will not go into full production, including the latest versions of *John Madden, NBA Basketball* and *NHL Hockey.*

Cynics suggest, however, that the surprise announcement is part of a propaganda war after Nintendo's plans for Project Reality harmed 3DO share prices.

Capcom RPG for arcades

Taking a bold move in traditionally very safe market, Capcom have announced the planned 1994 release of a coin-op based on TSR's D&D fantasy roleplaying series. *Dungeons and Dragons: Tower of Doom* was absent from the JAMMA show in August but Capcom revealed the fourplayer title a week earlier at the 26th annual GEN CON Game Fair in the US – a convention attended by 20,000 keen fantasy enthusiasts. The 134 meg game – a side-scrolling, highly detailed action RPG – promises to be far better than Taito's aging RPG-styled coin-op *Cadash*.









Running on a separate screen on the Namco stand was a demonstration of the results of a deal between Namco and leading computer graphics house Evans and Sutherland. Four demos were shown– one from a driving simulator that that even put the incredible *Ridge Racer* to shame (top left); a 3D dungeon game (top right) with some spectacularly scary images; a train ride travelling through detailed stations (above left) and a space flight over Mars (not shown)

← ground-breaking CG computer graphics system as *Virtua Racing.* Sure, Larry the Lamb was more convincing than these excessively blocky polygonised people, but the fluid animation and imaginative camera angles quickly won the audience over. **Edge** is hoping that there will be a *Deluxe* version complete with datasuit.

Namco managed to put *Virtua Racing* firmly in the shade with the release of *Ridge Racer.* A custom-designed real-time texture mapping and rendering system pumps out the most photorealistic image ever seen in the arcades. You won't believe your eyes!

Behind closed doors, Sega was already preparing to leapfrog *Ridge Racer* with a sim based on Indy Car racing, but Namco countered with a sneak glimpse of joint-projects with Evans & Sutherland utilising hardware normally reserved for NASA and military use. Yeah, serious kit.

In a similar vein, Sega appears to have adapted the Activator technology for use in the arcades. This radical control method, where players ditch the joystick in favour of their own body movements, is due to appear for the Mega Drive any time now.

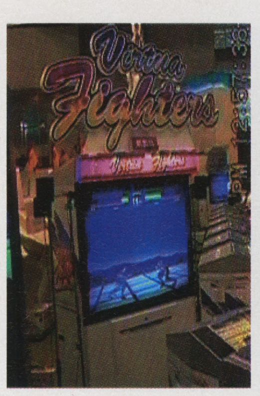
Dragonball Virtual Reality is the perfect licence to put this kind of technology to the test. Everybody loved it. Besuited executives →



Namco's *Ridge Racer* – 400 million floating point operations per second



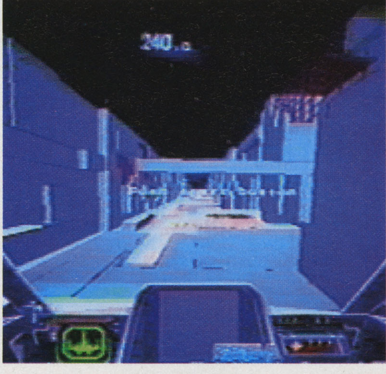
And if you think *Virtua Racing* is impressive, just you wait for this







Of course, there was bound to be a beat 'em-up using *Virtua Racing's* 'Model 1' CG board





Virtua Fighters **in action (top left and bottom right) clearly shows the limitations of using this 3D engine for this type of game – the characters inevitably look very blocky. What you can't see, of course, is that the 3D scrolling, animation and movement are all silky-smooth and very realistic. Sega's Dragon Ball (top right) got attendees jumping and punching in response to the screen – very funny to watch. And Star Wars (bottom left) looked brilliant on Sega's Model 1 system**

Continued

'The new industrial revolution will usher in the multimedia age. We believe its introduction will be spearheaded by games and entertainment. This would herald the start of a phase in which our industry will wield an immense influence on other industries. We anticipate the full-fledged onset of the multimedia age around 1995'

Hayao Nakayamma, President, Sega Enterprises

stripped down to their shirts and kids screamed out as they copied special moves from the TV cartoon series and actually jumped up to avoid obstacles on the big screen in front of them.

It's a strange feeling to see a videogame character mimic your punches, kicks and pauses for breath. No ordinary workout can match a few minutes on this beat 'em up for sheer fun and escapism. A fusion of *Dragonball Virtual Reality* and *Virtua Fighters* would be an outright winner. What's next? *Virtua Sex*?

AS-1, Sega's flagship motion ride, continued to pull big crowds. **Michael Jackson**'s introduction to *Scramble Training* helped to grab the attention of anyone walking by this monster simulator. However, **Edge** was more interested in the preview monitor tucked away down the side. *Megalopolice,* combining elements of *Blade Runner* and the Death Star chase sequence in *Return of the Jedi*, is the second of the computer-generated 'ride' machines to thrill *AS-1* punters.

Based on the blockbuster movie, *Star Wars* is essentially *AS-1* on the cheap. Trouble is, it just highlighted the fact that advanced texture-mapping is sorely missing from the CG board currently in service. Anyhow, Sega may have gone overboard on the VR theme with the introduction of *Virtual Reality Fishing* complete with laserdisc hookup and replica fishing rod.

Unlike the rest of Sega's output, *Alien 3* isn't state of the art by any stretch of the imagination. Grab the *T2* deck from Williams Bally Midway, restyle its gun and redraw the visuals. Oh, and get the aliens driving around in battletanks. Hey presto – you've got a bestseller.



Air Combat **from Namco uses their detailed polygon graphics system to astonishing effect**



Naturally, that *damn* machine was there again in its latest incarnation. *Super Street Fighter II* is previewed in full in Edge two, pages 40-41

Famicom Spaceworld '93



Punters queue for the Famicom Show in Shosinkai, Tokyo, where Nintendo announced details of the Project Reality SGI machine

As Sega took a lap of glory at the 31st Amusement Machine Show, Nintendo launched a broadside against 3DO by announcing its Project Reality videogames system (see p11).

That apart, Famicom Spaceworld '93 was a pretty low-key event. Swarms of excited Japanese children, enjoying the last days of their summer break, poured into the Shoshinkai exhibition centre looking for *Super Mario Kart 2* or more Super FX stuff.

Capcom went *Rockman* crazy for the occasion with a SNES version due in time for Christmas to be quickly followed by a soccer game. Meanwhile, *Rockman 6* and *Rockman World 4* proved the old NES and Game Boy can still cut it, while new work on the Super Famicom *Aladdin* was making it look like a surefire winner. *Astro Go! Go!* from Meldac is an entertaining space race – *F-Zero* given the *Pop 'n Twinbee* treatment – pushing Mode 7 to new limits. *Rainbow Bell Adventure* proved to be a cute platform romp featuring the well-loved pair of spacecraft.

Visitors to the Konami stand were more interested in a comical action game, *Ganbare Goeman 2*, and *Turtles Mutant Warriors* which is an *SF II* clone.

Nintendo provided the biggest downer of the show. *Sound Factory*, the sequel to *Mario Paint*, just offers a simple *Q*Bert* game and two sad 'creation' modules starring a fly and 16 other types of insects. There are better ways to part with ¥9800, especially as you can buy the cart and mouse separately and save ¥1000.

'If you see our new machine, all of you will understand what multimedia is all about. We don't believe in the idea of companies getting together to establish a new entertainment business. We need only one healthy, strong company as a leader'
Hiroshi Yamauchi, President, Nintendo

Sanyo show 3DO



Sanyo's version of the 3DO concept looks slick, but will be Japanese-only at first



By contrast, this is the Panasonic version set to go on sale in the States this month

The idea of 3DO is that it is a licensable technology, not a particular machine and not restricted to one manufacturer, though to date it's the Panasonic REAL player that we've seen. But Sanyo, too, are licensees and have now revealed a prototype of their version of the 3DO player.

The Sanyo model uses the 3DO name large, rather than the REAL brand identity Panasonic is using, but carries the same 'interactive multiplayer' tag. It is smaller, with a Sega-style, rather than Nintendo-like joypad, but the layout of buttons is identical.

American telecommunications giants AT&T have their own 3DO in preparation, while Panasonic's 3DO machine is expected to be first onsale, and cost $700 on its US launch on October 4th, which would probably translate to as much as £500 on its UK launch in Spring '94. The theory, however, is that this price will fall steadily over the following two years to less than half the original cost.

Interestingly, Atari seem sure they can produce the Jaguar for only $200, while Nintendo's SGI-based Project Reality machine, set to sell at $250, is said by experts to be '$50 more than analysts claim home users will bear'.

Japanese bet on 3DO

In the Japanese trade press recently there's been talk of Konami signing up for 3DO, alongside Namco and a whole horde of other interested parties. Konami are allegedly set to release software in time for Christmas '94, a period that the 3DO company are predicting will enjoy great sales for 3DO.

The plan is to not only sell through normal channels into the sofmaps – through an established distribution network – but also to sell software in the domestic appliances market held by Matsushita Electrics. If this holds true then surely other companies will follow Namco and try and chip in on the 3DO bandwagon.

Konami have not confirmed rumours and say the licence is being negotiated, reflecting the usual cautious approach. According to 3DO's Diane Hunt, 'We have around 50 Japanese licensees so far, but at this stage only 32 have announced their licence contracts.'

Other news has linked Namco with troubled Japanese film production company, Nikatsu, which suggests 'adult' software might be developed using the latter's film library.

Continued next page



It is...

The onsale date of PC Gamer, a brand new PC games magazine – hitting the shops on November 11th. This Christmas the PC games market is going to explode in the UK, and PC Gamer is poised to guide you through it...



The Business Design Centre in Islington played host to the games industry for the second time this year, staging the European Computer Trade Show on Sept 5th-7th

PCs lead the way at European show

It happens every six months. It's when a lot of videogames companies get together, show off all their best kit, pay people to walk round in silly costumes, and all go home three days later with a hangover. It's the ECTS. Didn't make it? Edge did...

The Autumn European Computer Trade Show (ECTS) – the game's industry's biannual trade bash – took place in early September. It gave software developers and publishers the chance to show off their products to the press, mostly in the form of glorified demos.

Overall the show was encouraging, especially for PC owners. Almost every software company seemed to be taking the format more seriously than ever. Big DX2s pumped out demos of high-res games, like **EA**'s beautiful *Forgotten Castle* (previewed in **Edge** one) – a game still very much at the 'look but don't touch' stage (but no less amazing for that), and **Ocean**'s giant *Inferno* (also in **Edge** one).

On the console side, things seemed to have slipped a little behind, with a depressingly wide range of platform games still filling the gaps on most companies' stands. The four-player *EA Soccer* (**Electronic Arts**) proved to be a success, though – but the size and quality of the EA stand almost guaranteed that it would be.

Both **Ocean** and **Interplay** also hit the punters with good stands. Ocean previewed its extremely sexy-looking duo, *TFX* and *Inferno* (with *Inferno*'s 3D polygons possibly the best of the show), in a flashy military-styled control base, complete with patrolling guard. Interplay were less successful with their *Stonekeep* – despite the effort that had obviously been ploughed into making the stand like a dark, brooding dungeon. The sheer size of the thing made the monitor inside (running *Stonekeep*) look like a 14in portable sitting in the middle of a dark room. Still, if you got up close enough, the game looked slick. Damn slick, in fact.

Philips made an impression with their Digital Video (MPEG) cartridge, and chapterised VideoCD versions of Top Gun and other stuff. The Dutch boys were there in force pushing the redesigned CD-i 210. And the FMV versions of *The 7th Guest* and *Microcosm* were worth a look, even if some of the older CD-i software looked a bit sad.

Finally, the real highlight of the show wasn't a game at all, but a rare moment when a few well-positioned people saw the Mario and Zool strollabouts falling down a flight of stairs. Neither was injured, they just got up and headed back in the direction of the crowds.

What dedication, eh?

Continued

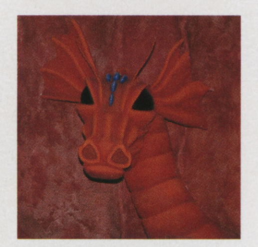
Nintendo sets press *Zelda* ordeal

The gaming press was surprised recently when word came down that Nintendo wanted to take them on a trip. The Big 'N' just hasn't been great in the past for media perks...

But this trip was a big departure from the norm. To introduce *The Legend Of Zelda – Link's Awakening*, for the Game Boy, Nintendo organised a coast-to-coast train trip: New York to Seattle. The idea was that the captive audience should play the game until someone finished it.

Sadly, disaster struck. Extensive flooding altered the route (ie made it longer). A couple of softies bailed out in Chicago, but all the rest survived the full course.

Eventually *Zelda* was finished by Jeff Harson – Big N's own 13 yearold champ. Nice one, Jeff.



Interplay's *Stonekeep* dungeon stand, complete with scary model dragon

Viacom get into Europe

You may have heard of Viacom – they're the entertainment and communications group that owns *Roseanne* and other big US shows and TV channels.

The big news is they are expected to buy Paramount in the States which would make for another giant media company, only a few notches below the mighty Time Warner.

But the issue here is games. And Viacom New Media, a division set up to develop and distribute software, has tied a deal with Mindscape to release PC CD-ROM software in Europe.

Following its acquisition of adventure specialists Icom Simulations – the company responsible for games like *Deja Vu* and *Shadowgate* – Viacom will be releasing what's claimed to be the first truly interactive horror movie on CD-ROM. *Dracula Unleashed* contains 'more than 90 minutes of video' and features 'multiple pathways' (the interactive bit perhaps?).

Look out for a prescreen soon.



Dracula Unleashed from Viacom New Media, out in November on PC CD







Nintendo®

FES set to blast

Thursday 11th-Sunday 14th 1993

FES games bonanza

Sega and Nintendo will be showing off their latest goodies at the Future Entertainment Show, and Commodore have taken over their own part of the Show – called the World of the Amiga. But it doesn't stop there.

For starters, there's The World's Biggest Games Arena, a kind of arcade featuring the latest games from most of the top software publishers, where you will actually be able to get your hands on and play the unreleased titles.

Leading software houses will also be showing their wares on massive stands, with all the glitz and glamour that only a major public show can offer. Electronic Arts are one of the biggest names and they'll have one of the biggest displays, but there's also many others, including the rarely seen Konami.

It's not too late to book your seat for the rollercoaster ride that is the Future Entertainment Show, the UK's equivalent of Japan's JAMMA and Super Famicom events (preceding pages).

FES has established itself over the last couple of years as the leading games event in Britain, a place at which thousands of keen gamers get the chance to try out the latest releases and particularly the big-name titles that will top the Christmas charts.

Led by Sega and Nintendo themselves, most of the top software publishers will be there, and this year a special section of the show is set aside as the World of Amiga, with all the CD32 creations on display.

The organisers, Future Publishing, publishers of Edge, have just arranged a special £6 discount rate for school parties of 15 or more – details from the hotline phone number. The GamesMaster TV show will be broadcast live from the Show on Thursday and free tickets to Disney's Aladdin are available to all who go on Friday. But remember you must book in advance! **E**

FES bookings hotline 051-356 5085

Thursday 11th: 10am-8pm (late opening for GamesMaster Live broadcast session)

Friday 12th: 10am-5pm

Saturday 13th: 9am-5pm

Sunday 14th: 9am-5pm

Tickets: All one price £6.95; family group (four people with at least one adult) £24.95

Datebook

October

Spotlight Amiga Show: October 17th, Novotel, Hammersmith, London **(081-885 5095)**. Open 9.30-6.00 Tickets £1.50 individual

Acorn World '93: Friday 29th-Sunday October 31st, Wembley, London **(0223-254254)**. Open 10.00-6.00 Fri, Sat; 10.00-5.00 Sun. Tickets £5 individual, £3 kids, £15 family – more expensive on the door.

November

Future Entertainment Show: November Thursday 11th-Sunday 14th, Olympia, London **(0225 44224)**. The wildest, biggest and best videogame show in the UK. Opening times and ticket details opposite.

Christmas International Computer Show: November Friday 19th-Sunday 21st, Wembley Exhibition Hall, **(0222 512128)**. Open 10.00-6.00, Fri,Sat; 10.00-4.00, Sun. Tickets £6 on the door; £8 by advance booking.

Supergames: November Wednesday 24th-Sunday 28th, Porte de Versailles, Paris **(010 331-4200 3305)**.

VR User Show: Monday 29th November-Thursday 2nd December, London Novotel **(081-994 6477)**. Tickets £7 (free if you pre-register).

December

Computer Shopper Show Christmas '93: Thursday 2nd-Sunday 5th December, Grand Hall, Olympia, London. **(071-373 8141)**. Tickets £7 adults, £5 kids (cheaper when booked in advance). Open 10.00-6.00 Thurs-Sat; 10.00-5.00 Sun.

January '94

Consumer Electronics Show, Las Vegas: Thursday 6th-Sunday 9th January, The Show Centre, Las Vegas, California USA organised by Consumer Electronics Group of Electronics Industries Association. **(0101 202-457 8700)**. Former trade-only event is now open to public.

Show organisers: if your show isn't listed here, it's only because you haven't told **Edge** about it. Do so on 0225 442244, or fax us on 0225 446019, or send details to **Datebook, Edge, 30 Monmouth Street, Bath, Avon BA1 2BW**

Just the job?

Some of the employment opportunities which are doing the rounds right now. Don't call **Edge** – call them!

Experienced videogame graphic artists, 'top rate salaries, financial security and a flexible working environment', full time or freelance, must be highly creative with proven track record. Probe 081-680 4142

Art Dept Manager, 'top rate salaries, financial security and a flexible working environment', responsible for recruiting, training, liaison with producers and evaluation of tools, h/ware. s/ware, must know *DPaint* animation and 3D packages. Track record in industry and management experience needed. Probe 081-680 4142

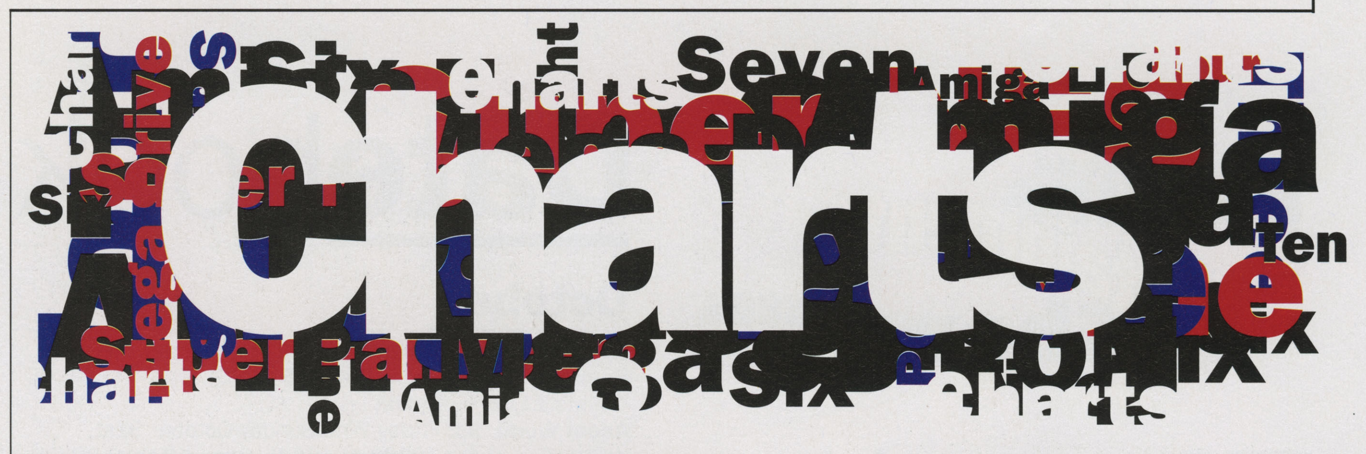
Senior/Assistant Creative Writer 'salary negotiable, Liverpool-based', writers with broad experience to produce copy for manuals, ads etc, send photocopies of published work. Psygnosis 051-709 5755

Junior Designer 'salary negotiable, Liverpool-based', opportunity for ex-college designer, experience on a Mac with Quark/Photoshop/Freehand etc. Psygnosis 051-709 5755

Marketing assistant 'salary negotiable, Liverpool-based', office/clerical skills and organised manner, A-level education, keyboard skills and SoH needed. Psygnosis 051-709 5755

Staff writers *Sega Power* and *Total!* magazines. Talented and enthusiastic people with in-depth knowledge of games sought, must be good writers but not necessarily published before. Send CV with published examples or a 500-word game review, Future Publishing 0225-442244

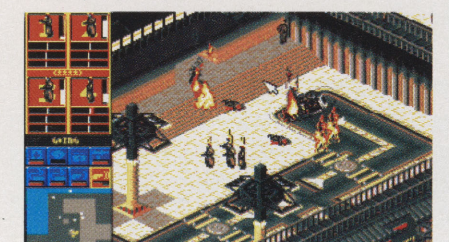
Syndicate Amiga **Striker** Super NES **Jungle Strike** Mega drive **Night Trap** Mega CD **Sallor Moon** Super Famicom (Japan) **Puyo Puyo** MD (Japan) **Day of the Tentacle** PC CD-ROM **Day Of The Tentacle** PC **Crash 'N' Burn (3DO)** Most Wanted...



The very latest **charts** from across the entire world of videogaming

Amiga

1 **Syndicate** EA (£35)
2 **Project X** Team 17 (£13)
3 **Gunship 2000** Microprose (£35)
4 **Dune 2** Virgin (£31)
5 **Goal!** Virgin (£31)
6 **World Class Cricket** Audiogenic (£30)
7 **Alien Breed: Special Edition 92** Team 17 (£11)
8 **Championship Manager 93** Domark (£26)
9 **Sensible Soccer 92/93** Renegade/Mindscape (£26)
10 **Desert Strike** Electronic Arts (£30)



Organised chaos with the very excellent *Syndicate*, still riding top of the Amiga chart

Syndicate holds the number one spot for yet another month, but *Project X* is climbing, and fast. *Desert Strike* pushes *Flashback* from the top ten, and the rest of the titles have just re-shuffled their positions. Full price games still dominate, though.

Continued

Super NES



Elite's *Striker* kicks *Starwing* from the top slot. And it's good to see there's hardly a single duffer in there either

10 **WWF Royal Rumble** LJN (£60)
9 **Cybernator** Konami (£50)
8 **Desert Strike** EA (£45)
7 **Super Star Wars** JVC (£50)
6 **Tiny Toons: Buster Busts Loose** Konami (£50)
5 **Super Mario Kart** Nintendo (£40)
4 **Batman Returns** Konami (£50)
3 **Alien 3** LJN (£50)
2 **Starwing** Nintendo (£50)
1 **Striker** Elite (£45)

Mega Drive

1 **Jungle Strike** EA (£45)
2 **Micro Machines** Code Masters (£35)
3 **Cool Spot** Virgin (£45)
4 **Flashback** US Gold (£45)
5 **Bubsy** Accolade (£40)
6 **PGA Tour Golf 2** EA (£40)
7 **Ecco** Sega (£40)
8 **Tiny Toons: Buster's Treasure** Konami (£40)
9 **Super Kick Off** US Gold (£45)
10 **Moonwalker** Sega (£20)

Mega CD

1 **Night Trap** Digital Pictures (£50)
2 **Final Fight** Capcom (£45)
3 **Road Avenger** Renovation (£40)
4 **Jaguar XJ220** Core Design (£45)
5 **Sherlock Holmes** Sega (£45)
6 **Time Gal** Wolfteam (£40)
7 **Robo Aleste** Compile (£40)
8 **After Burner 3** Sega (£40)
9 **Prince Of Persia** VC (£45)
10 **Black Hole Assault** Sega (£40)



***Night Trap*'s still No 1. But *Thunderhawk* and *Silpheed* are sure to dislodge it soon...**

There doesn't seem to be that much movement in the Mega-CD chart this month. The only really strong title is *Final Fight*, but it will soon be supported by both *Silpheed* and *Thunderhawk*.

Electronic Arts top the Mega Drive chart with their classic shoot 'em up – *Jungle Strike*



SFC (Japan)



The Japanese are potty about *SF II*. Almost as potty about it as they are about RPGs...

Proving that the majority of Square Soft's games sell out on first the day of release, *Seiken Densetsu 2* (*Holy Sword Legend 2*) – the most eagerly-awaited Super Famicom game of the year in Japan – has been quickly knocked off the number one spot by *Sailor Moon* - a crummy beat 'em up licensed from the hit anime series.

1 **Sailor Moon** Angel (¥9800)

2 **Seiken Densetsu 2** Square Soft (¥9800)
3 **Mario and Wario** Nintendo (¥6800)
4 **Thoroughbred Racer** Hect (¥9700)
5 **Super Mario Collection** Nintendo (¥9800)
6 **Super Power League** Hudson Soft (¥9500)
7 **SFII Turbo** Capcom (¥9800)
8 **Super Horse Racing** I'max (¥9700)
9 **Super Bomberman** Hudson Soft (¥7800)
10 **Prime Goal** Namco (¥8500)

B-Man Bernard in LacasArt's *DOTT*



US Gold's *DOTT*, seems to have firmly lodged itself in the number one position. And not even the frighteningly wonderful looking, not to mention expensive, *7th Guest* can budge it. *Eye Of The Beholder 3* makes its debut at number 10.

MD (Japan)

1 **Puyo Puyo** Sega (¥4800)

2 **J-League** Sega (¥8800)
3 **Gunstar Heroes** Sega (¥6800)
4 **Silpheed** Game Arts (¥8800)
5 **Rocket Knight Adventures** Konami (¥7800)
6 **Jurassic Park** Sega (¥6800)
7 **Golden Axe III** Sega (¥6800)
8 **Marble Madness** Tengen (¥6800)
9 **Ex Ranza** Gau (¥6800)
10 **Fatal Fury** Sega (¥8800)



Utterly wonderful film, that Jurassic Park. Pity about the utterly tedious MD game

PC CD-ROM

1 **Day Of The Tentacle** US Gold (£46)

2 **The 7th Guest** Virgin (£70)
3 **Dune** Virgin (£50)
4 **King's Quest 5** Sierra Online (£50)
5 **Sherlock Holmes 3** Mindscape (£50)
6 **Ringworld** Accolade (£40)
7 **Laura Bow 2** Sierra Online (£45)
8 **Indiana Jones - Fate Of Atlantis** US Gold (£46)
9 **Eric The Unready** Accolade (£35)
10 **Eye Of The Beholder 3** US Gold (£40)

PC



It's the Tentacle again. PC owners obviously have a thing for weird octopus games...

Not really the PC chart anymore, more like the LucasArt chart, really. Still, their top three placings were deservedly won.

10 **Flashback** US Gold (£38)
9 **Premier Manager** Gremlin Graphics (£30)
8 **Tornado** Digital Intergration (£45)
7 **Sensible Soccer 92/93** Renegade/Mindscape (£33)
6 **Populous & Promised Lands** Squad (£15)
5 **Fields Of Glory** Microprose (£45)
4 **Syndicate** EA (£45)
3 **X-Wing: Imperial Pursuit** US Gold (£20)
2 **X-Wing** US Gold (£46) US Gold (£43)

1 **Day Of The Tentacle**

Most Wanted

Edge was swamped with 'most-wanted' lists. *Crash 'N' Burn* got the most votes, Virgin's *Aladdin* wasn't far behind, and Ocean's *Inferno*, Sega's *Virtua Racing* and Pygnosis' *Microcosm* were all in the running. But If you don't agree with the list, let us know your most-wanted games...

5 **Microcosm** CD-i, FM Towns Marty
4 **Virtua Racing** Mega Drive
3 **Inferno** A1200, PC
2 **Aladdin** Mega Drive, SNES

1 **Crash 'N' Burn** 3DO

Mechwarriors II: The Clans Voyeur **Beneath A Steel Sky** Dungeon Master II: Skullkeep **Chaos Control** Return To Zork **Virtua Racing** Super Street Fighter II **Elfmania** Mega Man X **Megarace**…

Prescreen

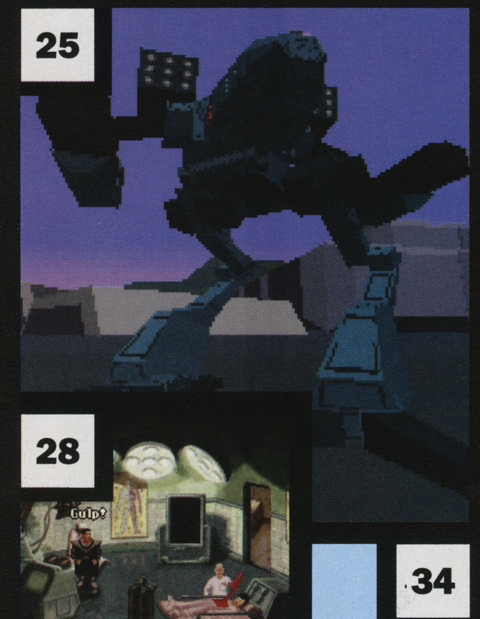
Nowhere else can you get the depth of information about new releases that you'll discover in the upcoming few pages of **Edge**. This is **Prescreen**, the part of the magazine set aside for news of games that are in development and coming up for release. Not just any old news, though. Not just any new games.

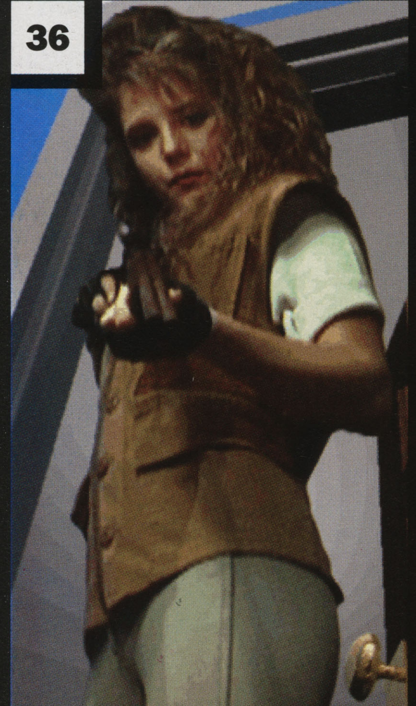
Edge maintains the very closest relationship with the software industry in the UK, America, Japan and around the world. So it is that **Edge** judges which of the hundreds of games now being programmed and playtested are the peak, the cream, the best.

These are the ones **Edge** is concerned with – these are the ones that count. Using face-to-face contacts and genuine insider knowledge, **Edge** brings you the true story of these games.

There's a new future, then, every month. This time around, keep an eye out for the views of FTL, the team who changed gaming forever with *Dungeon Master*…







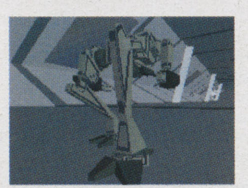


Mechwarriors II
The Clans

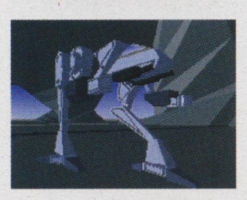
Activision's *Mechwarriors II* could be the closest thing yet to home interactive VR. Edge explores

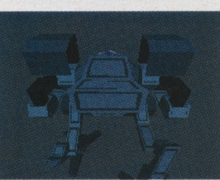


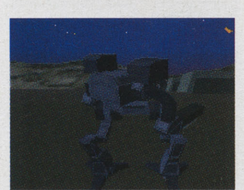












The Mechs all behave differently, some can fly while others just run fast. In fact the entire Battletech universe has been successfully squeezed onto the PC

Format: **PC**
Publisher: **Activision**
Developer: **In-house**
Release date: **01/01/94**
Size: **6 disks**
Origin: **US**

Enormous engines of destruction, stalking the land on a quest of exploration and devastation – soaring 30 metres tall and menacingly man-shaped, BattleMechs are the ultimate war machines.

The BattleMechs started their career in FASA Battletech's virtual reality arenas, and were soon adopted in a series of sci-fi books. And one of these books, Battletech: Way Of The Clans, was the source for this new PC-based game.

Activision is the company responsible for bringing the Battletech universe to the PC screen, and so far *Mechwarriors II* looks very promising.

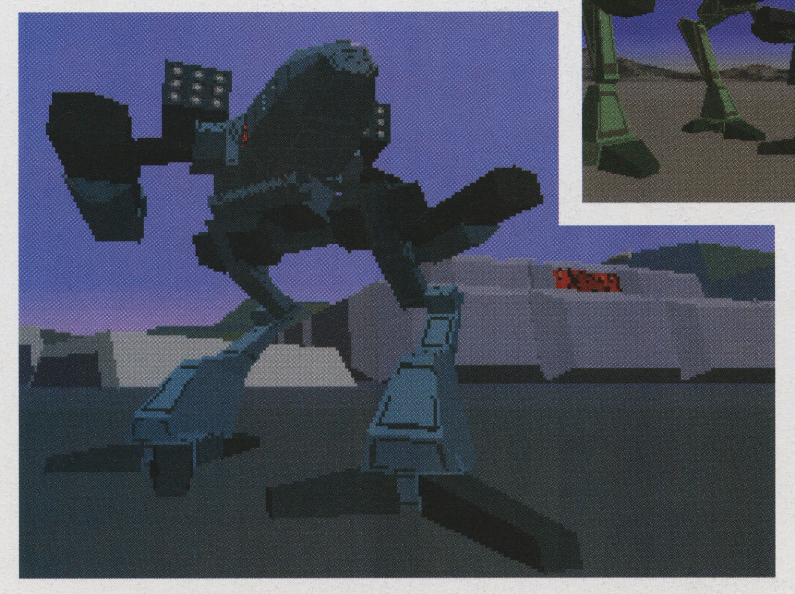
You can chose from a selection of 16 Mechs – each with its own abilities. Piloting the hulking mass of metal has been made simple enough for Battletech novices, but it gives the intricacy of gameplay veteran gamers will appreciate.

There are two modes of play, 'combat mode' or 'career mode'. The former throws your Mech straight into a battle with either a computerised, or through a modem link, a human opponent. The winner is the one to survive the battle. The other option allows you to develop your Mech by taking on the rival 'clans'.

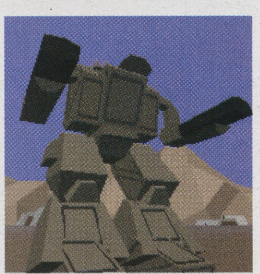
Using fully rendered 3D polygon graphics the game moves very smoothly, and you really do get the feeling that you're in control of a huge machine. Although it's based on the vastly superior VR arcade system, the programmers have done a great job in this conversion, and it even adds some depth that the original lacked.

Mechwarrior II could be the closest thing to home interactive VR to date. E

Here a Mech called the Hellbringer stands in the way of your success. Multiplayer wars can also be carried out, bringing the experience of the VR arcade right into your home



The Warhawk and Dire Wolf square off. They animate like ED 209 ('ten seconds to comply') out of Robocop



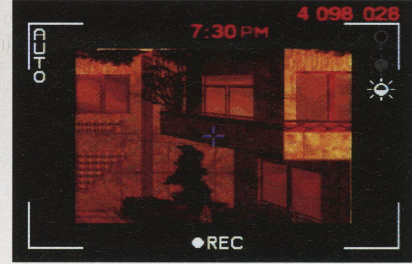
Here's the Executioner. Weighing some 95 tons he has a top speed of 65Kmh

Voyeur

Enter the age of the interactive movie – *Voyeur* is the first of a new generation of adult CD entertainment. Edge gets behind the scenes

A news reporter sets up the story in *Voyeur*. Here we learn of Hawke's presidential campaign. Note the Philips TV





Your luxury apartment overlooking Hawke manor (left). It's getting close to bedtime (below) – so get the camera out in case something important happens over there...

Format: **CD-i**
Publisher: **Philips**
Developer: **Philips POV**
Release date: **01/12/93**
Size: **1 CD**
Origin: **US**

Voyeur is being promoted as the first real interactive film for adults on the Philips CD-i. Described as a political thriller, the game is R-rated (an 18 in the UK), and has a lot more than politics to keep you engrossed.

Reed Hawke – at the age of 61 – is an ex-astronaut and head of the Hawke Industries empire. A true Republican, he feels that his country is lacking the stern political leadership it needs, and has announced his candidacy for president. He invites the rest of his family to Hawke Manor to tell them of his plans.

His advisors insist that if he is to be president, any skeletons in the closet will have to be hidden forever. No matter what the price.

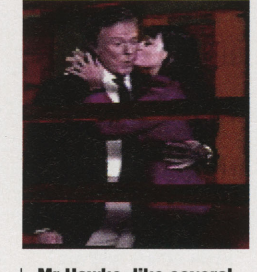
You play the part of an isolated individual – you have no connection with Hawke or his family, but your apartment oversees the back of Hawke Manor. And you are about to witness the family gathering. Your task: by assembling suitable evidence, you have to ensure that Hawke's presidential campaign fails.

You have the choice of three roles. You can, using your video camera, spy on Hawke Manor and record all the events that happen, and later give this taped information to the police. Your task is made easier by the fact that one of the family has been mentally scarred by Hawke and is prepared to reveal a dark family secret that will ruin his election campaign.

You also get the option of sacrificing yourself and saving that



The Hawkes discuss the evening's agenda, while Reed's 'personal' advisor listens in



Mr Hawke, like several former US presidents, believes in very close working relationships



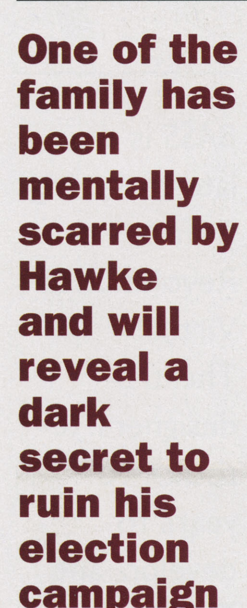
And through the Square Window, here's Chloe...



... she's Hawke's daughter, and she's sure something fishy is going on. What a girl



Jessica, Reed's sister, believes families should stay really close in times of need



One of the family has been mentally scarred by Hawke and will reveal a dark secret to ruin his election campaign

person by stepping into the story.

The third option is the most risky: You have to prove to the police that a murder or crime has been committed by Hawke. If you are successful, his bid for presidency will end. If you're not, Hawke will expose you as a voyeur and you'll end up spending the rest of your days in a padded cell.

To cap it all *Voyeur* has four scenarios. In each, a different family member will try to expose Hawke.

Voyeur stars **Robert Culp** as Reed Hawke and **Grace Zabriskie** as his wife Margaret. The supporting actors have all been involved in films or TV shows, and the creators worked right up to budget to get the right people for the job. Culp, in particular, gives a commanding performance in his role as the nasty president-to-be.

Gauging from the screenshots, you'd be forgiven for thinking the adult content was just a cheap way of selling the game. It's not – *Voyeur* does contain some suggestive scenes – but that's all they are, suggestive.

The addition of scantily clad actors only adds to the realism (and the humour) of the whole thing.

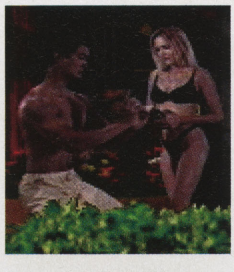
The effects

in the game were achieved using a new digital production technique. The actors performed against bluescreen, with 3D computer graphic sets, the information was then digitised onto the CD-i disk.

Edge spoke to **David Riordan**, *Voyeur*'s producer, about the project.

Edge How did you get so many good actors involved with *Voyeur*?
DR 'We did a casting call to all the movie agents. They got really excited about this interactive stuff and thought it would be something their clients should consider. We got better people than we anticipated, especially with only a $750,000 budget.

'Some were hesitant at first, Robert Culp was one of those. He didn't know quite what it meant and what it was all about. But he finally agreed and then really got into it.'



Masa, demonstrating impressive will-power, practises his Kung Fu moves with Lara

Edge How long did the shooting take?
DR 'We shot eight scenes a day, and it was finished in nine days.'
Edge Do you see Hollywood getting more involved with software?
DR 'Yes, it makes sense for people doing feature films or TV to think about interactive versions.'
Edge So who is *Voyeur* aimed at?
DR 'We wanted to make something for a larger audience than just gamers. *Voyeur* is the first step towards that.'

Voyeur is out in the US in October, and the UK in December. If it works as promised, it'll be another reason to start taking CD-i seriously. E



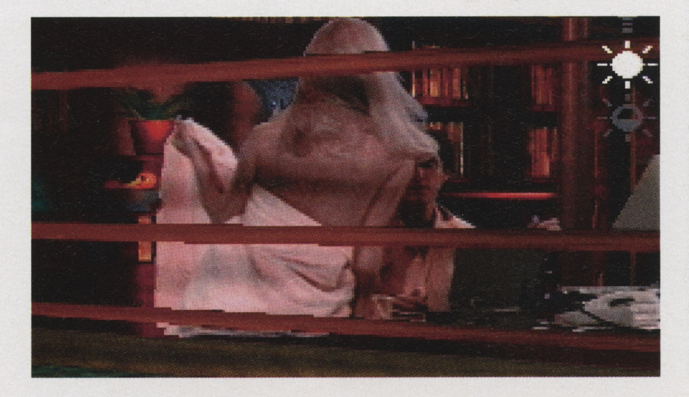
Reed's son, Zack, is mad at his father. But is he mad enough for revenge?

Personnel

Reed Hawke: Robert Culp
Margaret Hawke: Grace Zabriskie
Jessica Hawke: Kat Sawyer
Zack Hawke: Michael Corbett
Chloe Hawke: Sherrie Rose
Lara Hawke: Denise Loveday
Masa: Bruce Locke
Frank: Robert Frank Telfer
Chantal: Musetta Vander

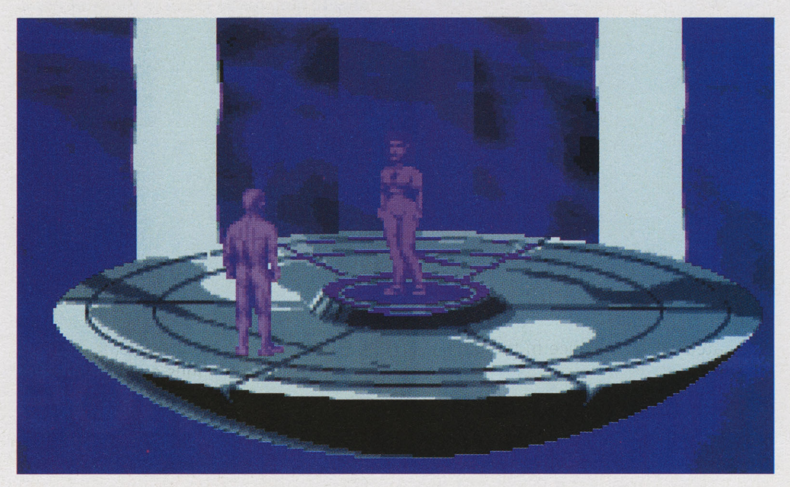
Producer: David Riordan
Producer: David Todd

Zack looks for a way to get back at his father. Sadly he seems to have been distracted. Could this be his father's doing? Time will tell...



Beneath A Steel Sky

BASS is the latest offering from Revolution's Virtual Theatre designers. It took two years to develop, and **Edge** asks; does it have what it takes to be another *Lure Of The Temptress?*



Inside the cyberworld of *Beneath A Steel Sky*. Robert Foster (left) has to collect a vital message from this computerised girl – it's not all work, work, work, y'know...

Format:	**PC/PC-CD ROM**
	Amiga A5000
	Amiga A1200 1Mb
Publisher:	**Virgin**
Developer:	**Revolution**
Release date:	**late October**
Size:	**PC – 15 disks, 1 CD**
	Amiga – 10 disks
Origin:	**UK**

Following the surprise success of *Lure Of The Temptress*, Revolution have spent the last two years innovating their new graphic adventure, *Beneath A Steel Sky*.

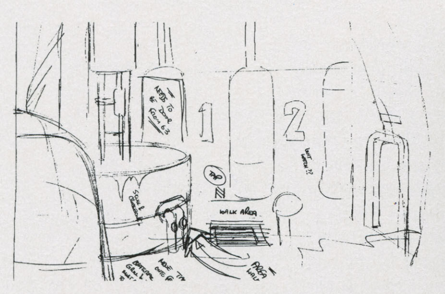
It involves a journey of discovery for one Robert Foster. Sole survivor of a helicopter crash, the orphaned child is brought up the outcast inhabitants of a desert region called the gap (outcasts they may be, but they dress well). As an adult, he is sought out and captured by security forces of nearby Union City, and his township with all inhabitants is destroyed.

Upon reaching the sprawling metropolis, the security craft goes haywire and Foster manages to survive yet another helicopter crash, taking refuge in the shadows...

Why was he captured? Why did they call him Overmann? Who actually is he? These are just some of the questions raised by the game, and which the player must answer as he



Many hours later, Foster finds himself on the base level of the city. This area is just for the most wealthy inhabitants





Three shots of the underworld scene in *Beneath A Steel Sky*. The drawing on the left is an original working sketch done by Dave Gibbons; the second is a colour screen prepared by graphic artist Les Pace, which was then scanned on Apple Mac and touched up to give the final image

'Virtual Theatre is without doubt the best technology – it's better than Lucasfilm, it's better than anybody'

Charles Cecil,
MD of Revolution Software

guides Foster and his robot pal Joey down through the increasingly prosperous levels of the city.

BASS contains 75 main screens, all of which were designed by **Dave Gibbons** – the artist responsible for the stunning Watchmen graphic novel. He prepared line drawings of the scenery which were then painted by **Les Pace**, and scanned into an Apple Mac for retouching.

Dave also drew an introductory comic book outlining Robert Foster's background and subsequent capture. The final image, showing the helicopter hurtling towards the city's skyscrapers, is continued in an animated intro sequence in the game.

Revolution is a small development team based in Hull. Hardly the Silicon Valley of Europe, admittedly, but Revolution's MD **Charles Cecil** disagrees: 'Hull has a very well respected university in computer sciences, and also a couple of miles down the road we have British Aerospace, who are one of the world leaders in Virtual Reality.

'We are joining forces to write some artificial intelligence to put into our games. What we're planning to do in the future is put in artificial intelligence whereby we set the basic parameters and then we let the characters decide what they're going to do themselves. Fundamentally, anything could happen.'

Beneath A Steel Sky consists of six sections, each of which contains more puzzles than the whole of *Lure Of The Temptress*. And while it has a jokey, almost Pythonesque feel to it, the plot is quite serious. 'We spend a long, long time, making sure everything's logical,' Cecil explains. 'A lot more work goes into our puzzle creation than would go into Lucasfilm's.

'We really respect Lucasfilm; we think they're very, very good. But we also think that if you write a slapstick game, the puzzles don't require a great deal of thought. You can jump around and really put tenuous connections in.'

The result of Revolution's logical approach to adventures is their Virtual Theatre engine, which first appeared in *LOTT*. Virtual Theatre generates a world where each character you meet exists outside of the current location – for instance, you can follow any character from one location to another. The game also keeps track of all the occurrences in different rooms and the changes that they might cause to happen elsewhere.

Cecil is bullish about VT, 'Virtual Theatre is without any doubt the best



Finally – you've made it into the underworld control room. From here on you have power over the city's main underworld computers

In the Bellevue area of the city, and Foster anxiously awaits surgery from mad Dr Burke. Here the good doctor mutilates a conscious patient

Continued next page



Scanned in 24bit colour on Apple Mac to give a 1,000x1,000 high-res image, each screen looks stunning – here's the main city view

Continued

'There's no reason why hundreds of people in California should know the future any better than ten people based in Yorkshire'

Charles Cecil,
MD of Revolution Software

technology: it is better than Lucasfilm; it is better than anybody.'

But even with the innovation of Virtual Theatre, *Beneath A Steel Sky* still isn't a million miles away from the stuff that was being done five or six years ago. 'No it's not,' Cecil agrees. 'What we have over our competition is our Virtual Theatre world, but we are aware of the fact that things haven't really changed all that much, and we accept that totally.'

A CD-ROM version of *BASS* is in the works, which will feature an extended intro and animated sequences. There'll also be full speech throughout as voiced by a handful of Royal Shakespeare Company actors.

Overall, Charles Cecil views CD-ROM with a cynical eye: 'I think it's grotesquely underutilised,' he claims. 'I also think it's very misunderstood. And nobody knows what the right answer is: Sierra and Lucasfilm have 300 people in their development teams; but there's no reason why hundreds of people in California should have any better understanding of what the future is than ten people based in Yorkshire.'

He's also similarly unimpressed by full-motion video: 'I'm very excited by everybody thinking that FMV is the answer, because I think they're totally wrong. FMV is linear; and you're never going to get proper interaction.

'I think that by going to FMV people are missing the point totally.'

So with *BASS* almost in the bag, what of the future? Cecil intends to continue refining the Virtual Theatre engine and also to experiment with artificial intelligence. But he is dubious about taking adventures into 3D: 'I don't think that the firstperson perspective is right. I think you can set atmosphere much better by looking at it from the thirdperson perspective.'

Indeed, Revolution used the talents of film students and animators to give a critical assessment of *BASS*'s graphics. And you can do the same when the game hits the shops towards the end of October. **E**

The main character, Robert Foster, swings for his life across a chasm between two buildings. Now, just kick in the window and he's safe





(Left) The Revolution crew: (top row from left); Steve Oades, Steve Ince, Dave Sykes, James Long; (Second row) Dave Gibbons, Adam Tween, Charles Cecil, Jeremy Sallis, Tony Warriner; (bottom row from left) Paul Humphreys, Noirin Casmody, Dave Cummins

Credits

Designer/director: Charles Cecil
Author/musician: Dave Cummins
Programmer: Tony Warriner
Programmer: David Sykes
Programmer: James Long
Comic/scenic designer: Dave Gibbons
Scenic artist: Les Pace
Graphics/animation: Stephen Oades
Graphics/animation: Adam Tween
Graphics/animation: Paul Humphreys
Sound effects: Tony Williams
Producer: Dan Marchant


Photograph: Courtesy Virgin Interactive

Revolution's Charles Cecil (left) and *Beneath A Steel Sky*'s screen designer, Dave Gibbons

The making of Beneath A Steel Sky

Fans of 2000AD or the Watchmen comic will recognise the scenic artwork in *Beneath A Steel Sky* straight away: the man behind all of it is ace artist Dave Gibbons. Edge talked to him about his work

Dave Gibbons got involved with the videogame business in a roundabout way. After the brilliant Watchmen graphic novel appeared, a movie was proposed and Ocean Software planned to make it into a videogame.

The One magazine did a piece on the Watchmen book and movie, showed the author, Alan Moore, the director, Terry Gilliam, but didn't mention the guy who drew every frame in the book – Dave Gibbons.

Dave called the magazine and after much apologising (not to mention a free Amiga), he was introduced to many people in the industry, including Charles Cecil, then working with Activision.

'He was interested in using my skills for a computer game,' says Dave, 'and lo and behold, several years later, he called me in to help with the design of a game.'

This might seem a drastic departure from the world of superheroes and villains, but Dave disagrees: 'Many of the skills in comic design are applicable to computer games and interactive software. Comics in many ways are like storyboards; comic book stories tend to be linear narrative in the same way that a lot of computer games are.'

So, over the period of a year, Dave designed some 75 scenes for *BASS*. He'd discuss specific screens with Cecil and the in-house designers, take notes and do rough sketches there and then.

'If I was really cooking I could, as pencil drawings, maybe design eight screens in a day,' Dave enthuses. 'Although, as in anything, you come across certain screens where you can spend two days just trying to fix them. And, as with any long-term endeavour, by the time you get to the end of it you realise that things earlier on could be made better, so you go back and revise those.'

As well as the scenery, Dave also drew an eight-page comic strip that acts as the introductory manual. This was so successful that Revolution are planning to include animated comicstrip-style sequences in the CD-ROM version. This has found favour with at least one person: 'We're ending up with things that have a lot of the virtues of movies, games, and of comics', Dave claims. 'And I would rather see a personal vision on screen than filmed live-action. I have an idea that with CD technology there are going to be a lot of little-known actors photographed and appearing on our screens. I think if you have a graphic artist involved, you get something even better than reality.'

For the technically minded, Dave works on Bristol Board, a special type of card; he sketches first with a mechanical pencil, and then inks in with a dip pen and a good quality watercolour brush. He uses markers for large areas, and a Rotring pen to do the lettering.

'The beauty of comics is that all the tools are simple and cheap. And as things develop, this is going to be the joy of computer art as well. It's going to be very easy and very cheap to do.' E






Two of the original sketches from the introductory manual for *Beneath A Steel Sky*. The cutout figures above are Foster (above left), a Gap dweller (above right), and a security trooper (right)

Dungeon Master II: Skullkeep

Dungeon Master II has been over two years in development. So why is this the most eagerly-awaited sequel ever? **Edge** went to California to find out

'We made a decision to just forget about things like graphics and CDs... and focus on the key issues'

Wayne Holder, President, FTL

Edge one had the first ever shots of *Skullkeep*. And now they're in 256 colours



Before entering the castle – your main objective – you have to find the secret entrance in the forest. In the fog. At night. Amidst scary trees...

Format: **PC/Amiga Mega CD**
Publisher: **Interplay**
Developer: **FTL**
Release date: **Jan-Mar '94**
Origin: **US**

Hidden away in the hills, just off the Mira Mesa freeway in San Diego, southern California, is **FTL Games**, a company that delivers some deep, deep games.

Back in 1987 they gave the 16bit market a much-needed jumpstart with two games for the Atari ST – *Oids* and *Dungeon Master*. And for the last two years they've been battling away with the long-awaited follow-up to *Dungeon Master*, *Dungeon Master II: Skullkeep*, previewed in **Edge** one.

Edge visited Software Heaven to see the new game in progress...

'We'd always had a proper sequel to *Dungeon Master* in the pipeline,' notes **Wayne Holder**, president of FTL, 'but we started worked properly on the *Skullkeep* project about two years ago.

'We made a decision early on to just to forget about things like graphics and CDs and that stuff that everyone else is chasing, and just focus on the key issues – the simulation

Oids on the ST (top) was FTL's other instant classic launched at the same time as *Dungeon Master* (above) in '88

aspects, basically. So we started engineering *Skullkeep* with a broad base in mind – we didn't want the game to be just for the PC. Everyone seems to be doing that.'

It's interesting to note that *Skullkeep* is being designed as the first of three products. The second game, with a working title of *True Identity*, is at the advanced prototype stage, while the third game, *Secret of the Void*, is more conceptual than anything.

'We're trying to not spend so much time producing a scenario, but focus on building little entities. For example in our system in *Skullkeep*, a creature is a whole collection of data which is handled through a sort of intelligent scripting program where they all run their own self-contained little programs', Wayne says.

As reported in **Edge** one, *Skullkeep* differs from the majority of RPGs by including a complex intelligence system for the characters and monsters in the game. To illustrate this, three quarters of the data is game code, and only a quarter is graphics. The more usual equation would be the reverse.

But why has it taken this long for a sequel to arrive? Wayne explains, 'We spent the best part of three years converting the games over onto the various computer formats, particularly in Japan, including the PC 9801, FM Towns and Sharp X68000. I'm afraid I know more about Japanese computers than I'd really like to.'

And consoles? 'The SNES version was handled by JVC in Japan,' Wayne explains, 'it took an eternity to appear in the States. The DSP chip in the Super Famicom game became a point of contention. As for the PC Engine CD version, that was tackled by **Philip Mitchell** in Australia. Quite how he managed to get the game running in the 256K RAM buffer I'll never know. We tried to convince JVC in Japan that it couldn't be done, but this guy did it, and it works really well. I'm sure you remember how we couldn't even get the original Amiga game into the machine's 512K base memory – it needed a half meg upgrade.'

Since the prescreen in **Edge** one, *Skullkeep* has been delayed until the first quarter of 1994. So, it looks like JVC's Mega CD version might be first.

Stay in touch with **Edge** for news on this long-awaited title.



Photograph: Jason Brookes

FTL's San Diego headquarters basking in the sinking Californian sunshine. A good place to work

Photograph: Jason Brookes

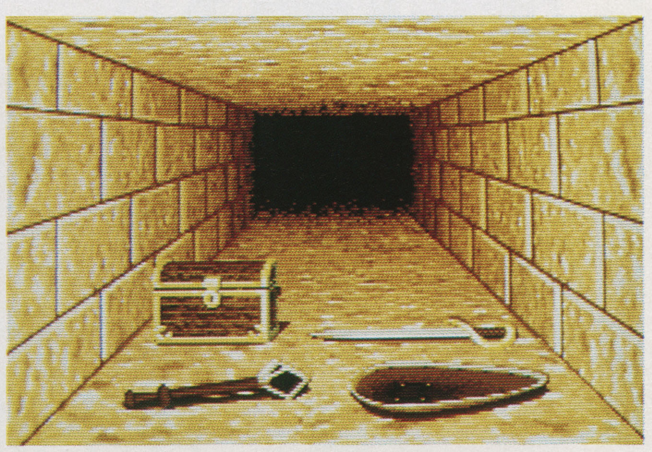
From the left: Doug Bell, Wayne Holder, Kirk Baker, Bill Kelly, Bert Huntsinger and Andy Jaros...

Credits

Producer: Wayne Holder
Chief engineer: Doug Bell
Graphics: Andy Jaros
Monster design: Bill Kelly
Graphic tools: Kirk Baker
Dungeon design: Burt Huntsinger



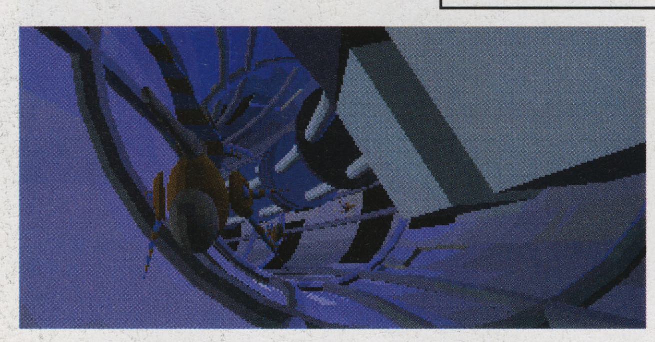
The setting of *Skullkeep* differs from *Dungeon Master* and *Chaos* with its a mixture of traditional D&D fantasy and old-world technology



Players of the original games will be able to delve straight into *Skullkeep*. And don't those weapons look better in 256 colours?

Chaos Control

Chaos Control is a shoot 'em up that's bound to turn heads. Due first on CD-i, it'll also be appearing on PC, 3DO and Mega CD. Edge reports



Like *Silpheed*, *Chaos Control*'s visuals were designed with 3D models and then rendered on Silicon Graphics hardware (PC CD-ROM shot)

An OG guard complete with heavy assault rifle, protective vest and targeting link...

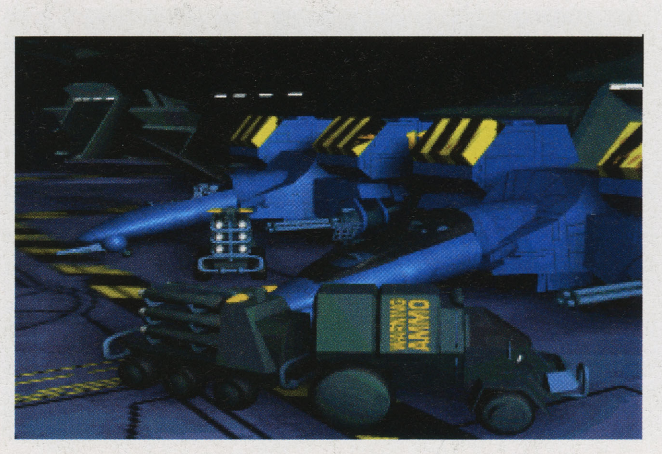
Format:	**CD-i/PC CD-ROM 3DO/Mega CD**
Publisher:	**Infogrames**
Developer:	**In-house**
Release date:	**April '94 /TBA/TBA/TBA**
Size:	**1 CD**
Origin:	**France**

Chaos Control – never heard of it? Then prepare yourself. A behind the scenes showing of this game was at the recent ECTS. And observers were left rubbing their eyes in amazement.

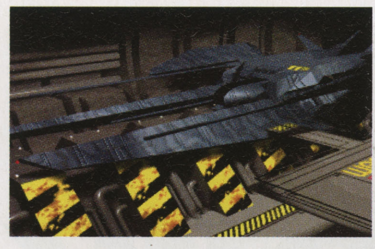
Chaos Control looks incredibly impressive, and the demo is full of wild 'camera' angles with fast and smooth sweeping movements. It's one game full of beautiful graphics that really does look exciting.

For once the main character is female, and she stars in a shoot 'em up in a similar vein to *Silpheed*.

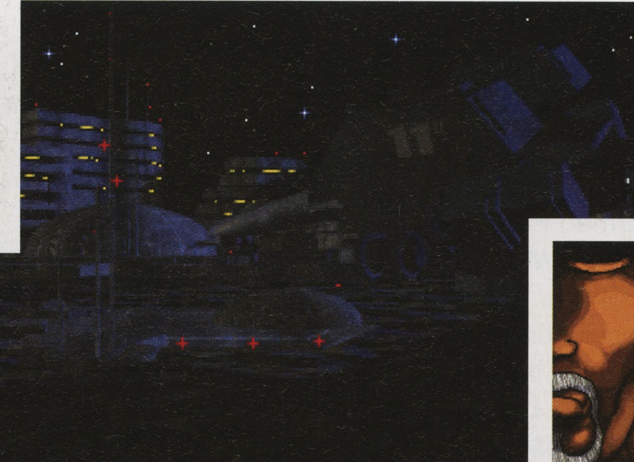
All the graphics were rendered on Silicon Graphics workstations, with the full colour CD-i version using



The beautifully rendered futuristic landing bay in *Chaos Control*, complete with armoured baggage carts, and those wheely step things



A cursory glance into the docking bay reveals some beautifully rendered ships



Impressive scene-setting stuff like this is expected to make *Chaos Control* more involving than the average space shoot 'em up...

Drevon's artwork is based on Japanese anime – things like Macross and Detonator Orgun



'We didn't want the same old 3D Studio look – it's always the same. That's why we chose Silicon Graphics'

Bruno Bonnel, chairman, Infogrames

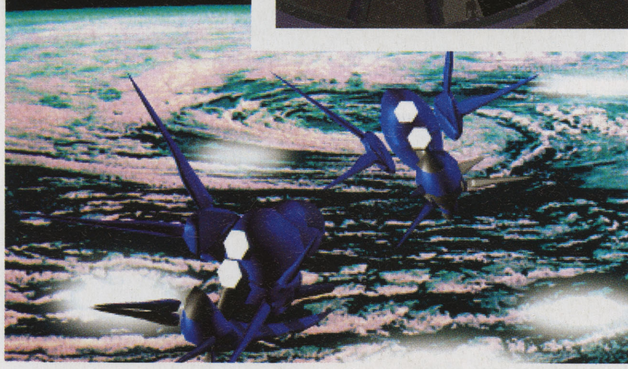
images at 30fps, full-motion video in 24bit colour. Of course, for the PC these will be cut down t0 256 colours and a frame rate of between 16-20fps, depending on the CD drive speed.

All the graphics for *Chaos Control* were set out by **Frank Drevon**, the in-house artist, who worked out in the States with the programmers at Infogrames' US division, I•motion.

Bruno Bonnel, Infogrames' chairman, spoke to **Edge** about the making of *Chaos Control*...

Spectacular winding tunnel sections involve dodging fleets of robots (PC)





The CD-i version is by a long, long way the most stunning, and most complete version. The MPEG Digital Video cartridge does the trick...

BB 'We've did the game in collaboration with a Brussels-based computer imaging company called Little Big One. Frank Drevon did all the design work and made the models, while the people at LBO did all the calculations. The graphics took 2-4 months to render on two Silicon Graphics machines.'

Edge What was the reason for choosing Silicon Graphics?

BB 'We didn't want the same old *3D Studio* look – it's always the same. The same light effect, the same touch and the same metallic atmosphere. That's why we chose Silicon Graphics.'

Edge The game looks great, but would you say it's an original concept?

BB 'We're not claiming it's original, but we are claiming that it's the unique vision of its artist Frank.

'He's effectively showing the world the inside of his mind, right down to the utterly bizarre flying-inside-the-computer sections.'

With graphics pulled off the CD 'on the fly' like in *Chaos Control* – no-one expects a hugely interactive game, just a stylish shoot 'em up with great visuals.

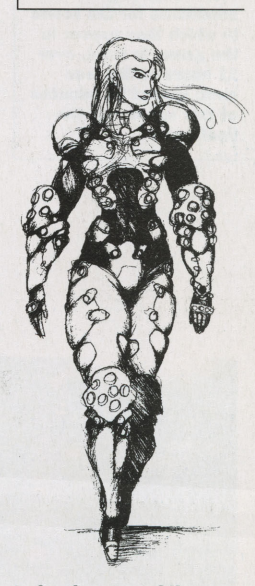
And with graphic visual design as strong as this, we're prepared to forgive the very simplistic shoot 'em up gameplay – well for a little while, at least.

Credits

Producer: Bruno Bonnel
Graphic artist: Frank Drevon
Programmers: I•Motion
SGI rendering: Little Big One



Flying past the statue of Liberty is a spectacle you won't forget (PC)



Jessica, one of the game's many stylishly created battlesuit-clad characters

The *Zork* saga continues. But now it's got FMV graphics and raytraced artwork. **Edge** takes a look

Return to Zork

Format: **PC/PC-CD**
Mega CD (planned)
Publisher: **Activision**
Developer: **Infocom**
Release date: **10/93**
Size: **12 Disks/CD-ROM**
Origin: **US**





All the characters in *Return To Zork* are played by actors. They were filmed against bluescreen under the correct lighting conditions for the scene in which they appear in the game. In total, over 11 hours of film was shot; around 60 minutes of this appears in the final game

The first *Zork* game appeared in the early eighties as a text-only adventure, and at the time it offered an unparalleled blend of relatively sophisticated puzzles, a detailed gameworld and a sense of humour. *Return to Zork* is the latest in the series, and is being touted – mainly by publishers Activision – as the closest a game has come yet to cinema-quality production.

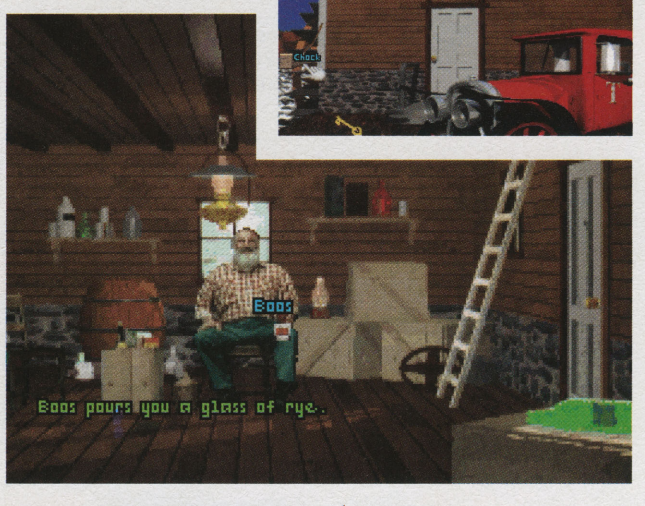
Central to this claim are the twenty or so professional actors who play characters in the game. They include **Jason Hervey** (Wade from The Wonder Years) and **Sam Jones** (Flash from Flash Gordon). The actors were filmed bluescreen and then matted in over the 3D raytraced backgrounds.

In the CD-ROM version, due out in November, all the characters also move in full-motion video and their speech, over 100 minutes of it, is fully lip-synced. The 12 disk floppy version suffers a little in comparison – there's

The Old Mill (below) sits next to the river. There's nothing to discover outside, so go through the door to meet Boos Myller, the aptly-named (if misspelled) miller



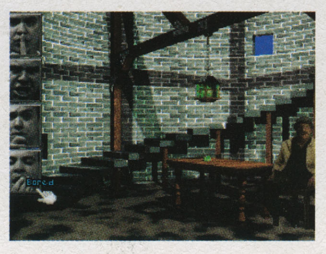
Boos (below) is an old soak who tries to get you drunk. Go around the back of the mill (right) and you'll find a car and some keys





Move the mouse pointer over the lighthouse and an arrow appears. Click on it to go to the lighthouse

Inside the lighthouse is the keeper, a confused old fool who talks endlessly about nothing very useful





Go around the back of the lighthouse and you'll find these vines and some planks of wood

Chop the vines and use them to tie the planks together. Now you've got a raft to ride downstream





Some of the frames in the CD version took as long as eight hours to render



The difference in quality of the graphics between the CD version (above) and the 12 disk floppy version (right) is clear to see. The CD version also runs in full-motion video

The Wizard, Trembyle, chips in with advice and the odd hint now and then



All the speech in CD *Return To Zork* is fully lip-synced. And what lips!

no full-motion video video and the graphics aren't up the same high standard as the CD version, but all the speech and all the gameplay is there.

The story behind the game is quite unusual: your character has won a fourday holiday to the Valley of Sparrows, and you are given a camera, a tape recorder and a teleorb – a crystal ball through which an old wizard offers you advice. There are over 180 locations overall, with around 50 puzzles to be solved.

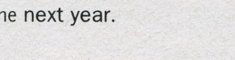
Control of the game is by mouse, although not using *Monkey Island*-style pulldown menus or a *Dungeon Master*-style control panel. As the mouse is moved about the screen different icons pop up. You can call up banks of icons with commands such as pick up, throw, speak, pull, and so on.

Sadly, it's not quite the 'revolutionary interface' that Activision promises, and it's certainly nowhere near an interactive movie.

Much of the gameplay is fairly linear and there doesn't seem to be a lot of scope beyond doing things the right way (and moving on to the next puzzle), doing them the wrong way (and dying) or sitting staring at your screen without a clue what to do next.

Activision already have a followup planned – another old Infocom adventure, *Planetfall* – which will use the same techniques as *Return to Zork*.

And everyone is eagerly awaiting the Mega CD version of *RTZ*, still in development and not due until mid-June next year.



Credits

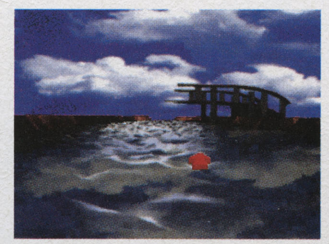
Production designer: Joe Asperin
Director: Peter Sprague
Writer: Michelle Em
Photography: Glenn Winter
Music: Nathan Wang
Music: Teri Mason
Special effects: William Volk
Producer: Eddie Dombrower
Executive producer: Dave Mangone



The Witch Itah raises her unnecessarily long wand above her head

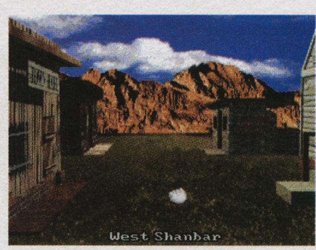
There's nothing much to do on this stretch of river. Just sail on and something interesting will turn up





Steer your raft towards the collapsed bridge and you'll be able to land. Now make for the town

Heading into the deserted town, there are four buildings to choose from. First on the left is...



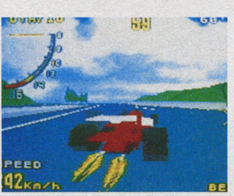


... The Town Hall. Go inside to meet the Mayor and brush up on local history in the archives

Virtua Racing

The recent showing of *Virtua Racing* on the Mega Drive at the JAMMA show in Japan, raised a few eyebrows... Could Sega have the game of the year?





The main viewpoints from the game. All four panning views will be incorporated into the finished game, although how they'll be selected isn't clear at this stage

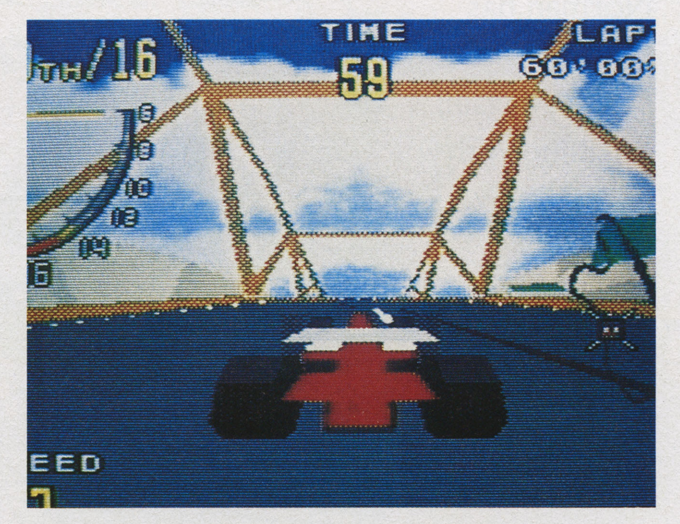
Format: **Mega Drive**
Publisher: **Sega**
Developer: **In-house**
Release date: **TBA**
Size: **16 Mbits**
Origin: **Japan**



Sega has a history of great driving games, with *Virtua Racing* winning the hearts (and coins) of players everywhere. And at the recent Amusement Machine Show in Japan, **Edge** got the first public look at the Mega Drive version.

Including the much-touted Sega DSP running at a reputed 26MHz, MD *Virtua Racing* is very impressive, and emulates the coin-op far more closely than expected. The graphics are so good, in fact, that the DSP is becoming sought after by developers.

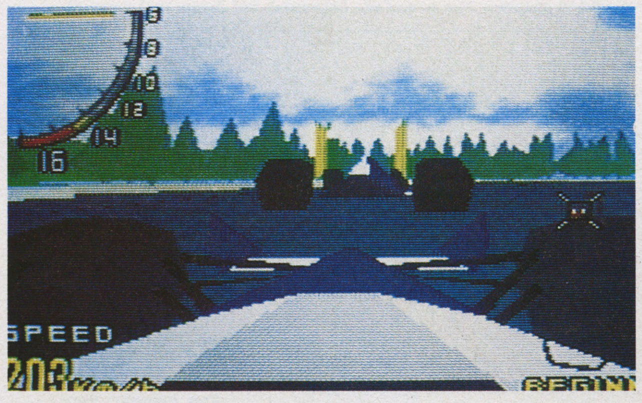
After all, who would expect a $10-15 DSP to drive polygons this detailed at over 15 frames per second?



It's good to see the programmers have managed to get the wheels resembling wheels instead of black squares, as they originally started out looking in Sega's early *Virtua Racing* development shots

Sega's Model 1 board – the thing that drives the coin-op's graphics – contains a V60 processor, five DSPs each delivering an incredible 12Mflops (floating point operations per second), 16·7 million colours, a 498×384 resolution, and shifts approximately 180,000 polygons per second.

And it never drops below a jaw-droppingly fast 30 frames per second. Ever.



The cockpit view boasts a higher frame rate due to the slightly smaller road display. And, no, there's been nothing like it for sheer speed...



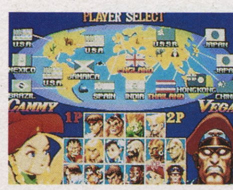
A JAMMA show attendee plays the *Virtua Formula* coin-op – VR's faster sequel

Super Street Fighter II

The game that's seen more versions and updates than Barry Norman has seen films is back yet again, this time with four all-new characters. **Edge** checks out the new moves…



Four brand-new characters have been added along with their own special moves, the specials of the original contestants have been updated, and both background graphics and sound are improved, but *Super* lacks speed







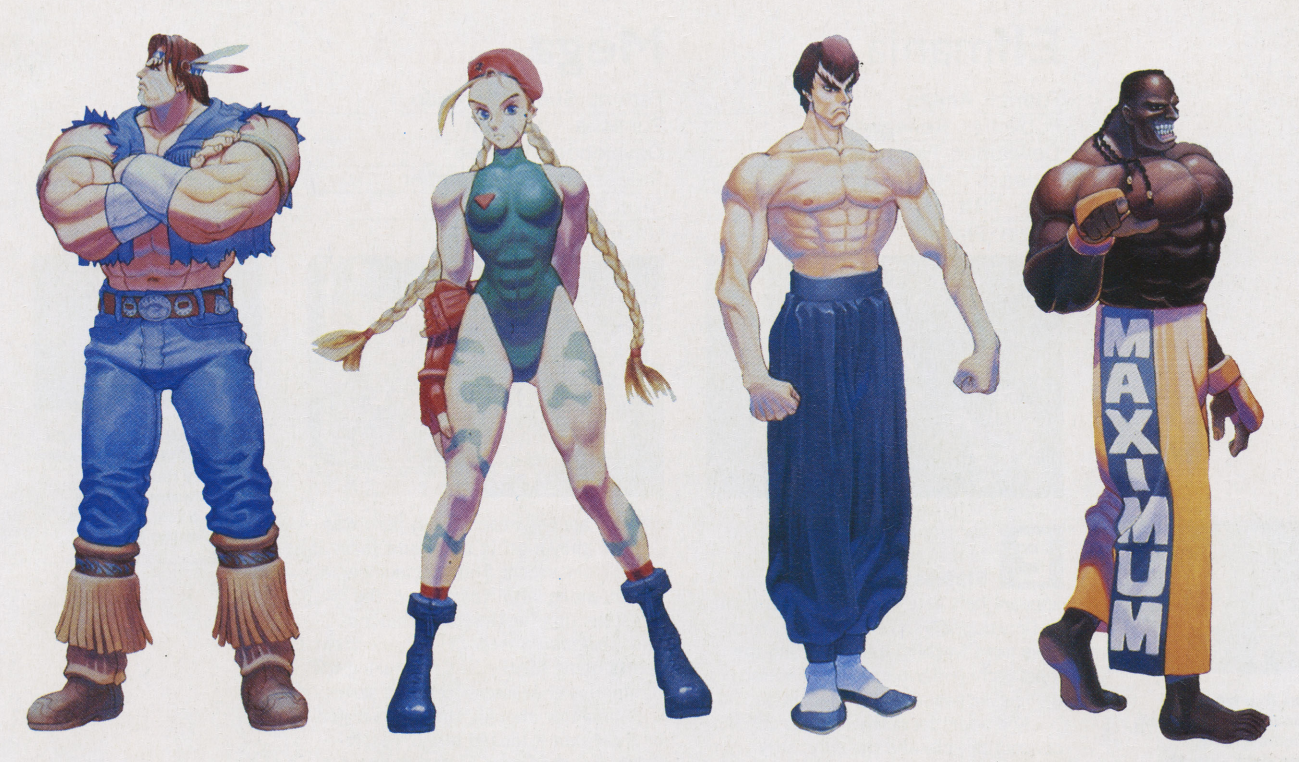
New opponents in new countries. Go to England to meet and beat Cammy

Format: **Arcade**
Publisher: **Capcom**
Developer: **In-house**
Release date: **October**
Size: **Not available**
Origin: **Japan**

Yes, another update of the most popular arcade game of all time. There are four new characters, each with his or her own background. Cammy, the English representative, is small but very agile: some describe her as the female Guile, but we think she's far better. Moves include the deadly 'Cannon Spike', a vertical rising attack, and the 'Spiral Arrow' which is similar to, but more potent than, Dhalsim's 'Spear Attack'.



Yes, indeedy. Sure. But can the designers get round to an *SF III*?



Introducing... Thunder Hawk from Mexico, Cammy representing England, Fei Long of Hong Kong and Dee Jay from the island of Jamaica.

Ken's 'Dragon Punch' will now scald his opponent, and Ryu's fireball is bigger and faster...

Next is Thunder Hawk from Mexico, one of the most difficult and yet most satisfying characters to master. T-Hawk would love to clout you over the head with the 'Tomahawk Buster' or dive at you with his 'Condor Dive'. The 'Mexican Typhoon', his other special move, is very hard to execute.

Jamaica is the home of Dee Jay, a large, grin-wearing kick boxer. His special moves include the 'Air Slasher' and a deadly 'Machine Gun Uppercut'. He's fast but limited. Lastly, Fei Long of Hong Kong is one bad mother – fast, strong, agile, and generally very tough. His amazing 'Shien Kyaku' will burn most opponents, and the 'Rekka Ken' is a very destructive punch.

All the older characters have been given a face-lift, too, as have the backgrounds. Their moves have also been played with: Ken's 'Dragon Punch' will now scald his opponents and Ryu's fireball is bigger and faster, while Chun Li has lost her 'Spinning Bird Kick', for example.

On top of all that, there is a 'Tournament Battle Mode' for up to eight players, and the tunes have all been beefed up somewhat, on top of which it plays in 'Q Sound'.

Sadly, there has been a drop in speed. It's as fast as *Champion Edition* but not nearly as fast as *Turbo*. Sure, it looks great and plays better, but where is *Street Fighter 3*? E



Ryu's fireball is bigger and faster now – one of several Special upgrades



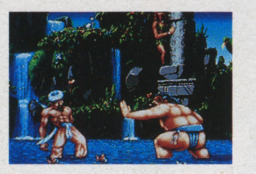
One of the new kids on the block, the sizeable Thunder Hawk, takes a bit of a kicking at the hands of another new entrant, Fei Long.

Spunky English lass Cammy (left) shows off her 'Spiral Arrow', a gravity-defying move similar to Dhalsim's 'Spear Attack'.

Elfmania

Format: **Amiga**
Publisher: **Renegade**
Developer: **Terramarque**
Release date: **TBA**
Size: **TBA**
Origin: **Finland**





Looks like fat boy E Honda's doing a spot of moonlighting. Above right – great backdrops, sure, but let's hope it plays well

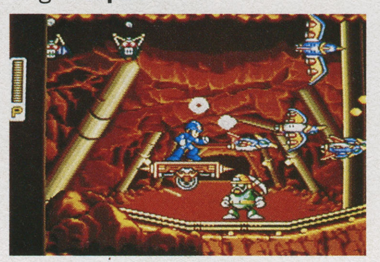
Ever wondered what happened to that top C64 programmer **Stavros Fasoulas**? Well, it appears he's now involved with a team of finnish coders, Terramarque, who have been working hard creating the most technically-outstanding action game ever produced on the Amiga.

And apart from the obvious *SF II* connection, oh, and the silly, silly name, *Elfmania* looks pretty good, with very smooth sprites and excellent 3D scrolling.

Impressive stuff for an A500.

Mega Man X

Format: **Super Nintendo**
Publisher: **Capcom**
Developer: **In-house**
Release date: **December**
Size: **12 Mbits**
Origin: **Japan**





One section sees Mega Man rolling along a mine railway (left). Underwater baddies pose a few problems for him too (above)

Capcom's eponymous hero was shown off in fine 16bit form at the recent Shoshinkai show in Japan, along with *Rockman 6*, the latest version for the 8bit Famicom, and *Rockman Soccer*, a new side-view sports game for the SFC, featuring the diminutive characters from the series.

Somehow, though, the SFC version of *Rockman X* looked bland, possibly being overshadowed by the wonderful *Aladdin*, a game being worked on by the top Capcom team behind *Mickey's Magical Quest*, in fact.

MegaRace

Format: **3DO/PC-CD/Mega CD**
Publisher: **Mindscape**
Developer: **Cryo Interactive**
Release date: **02/94**
Size: **1 CD**
Origin: **France**

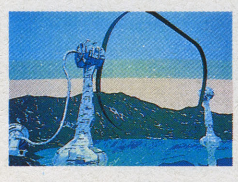


***MegaRace* on 3DO uses 32,000 colours and the frame rate – well, of course it's a lot faster. And (below left) more in-game graphics from the 3DO version. just look at that stunning car you'll be driving...**

After producing *KGB*, *Conspiracy* and *Dune I and II* for Virgin, Cryo Interactive – the talented French development house – are lending their hand to CD-only games. One of the best is *MegaRace*, a futuristic racing game pushing back the boundaries of 3D rendered graphics. Set in the future, the game is based on a concept called Virtual World TV – it features head-to head driving combat on a selection of virtual racetracks.

A choice of cars and weapons are available, and there are more than 30 minutes of video and excellent digitised animations, plus 2D morphing techniques.

Expected first for the PC, *MegaRace*, like many new CD-ROM games uses graphics steamed off the CD 'on the fly'. And even on the 150Kp/s Mega CD, the graphics are fairly smooth. Look out for a full report next month.

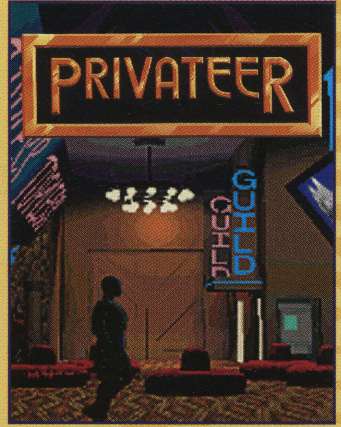


On the Mega CD there's notably less colour and detail, but still more than in previous M-CD releases. Not hard eh?

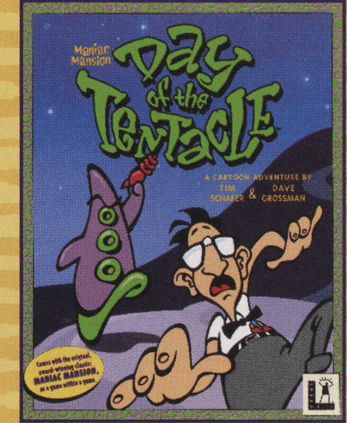




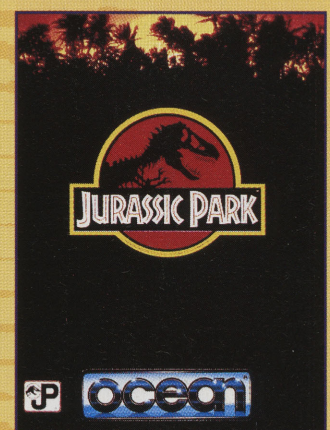
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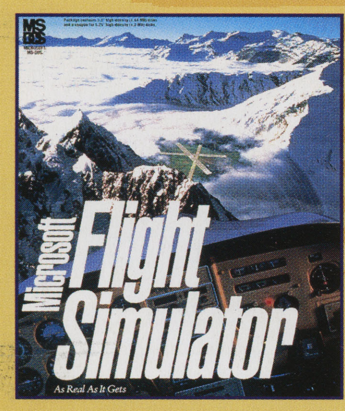
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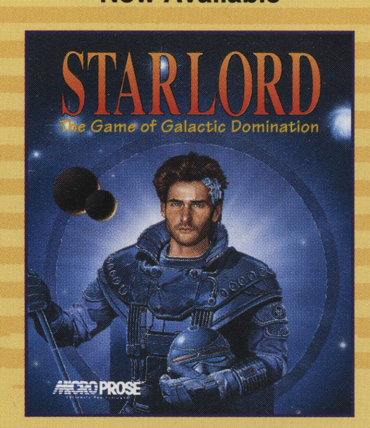
DAY OF THE TENTACLE
(PC•CD ROM)
Now Available



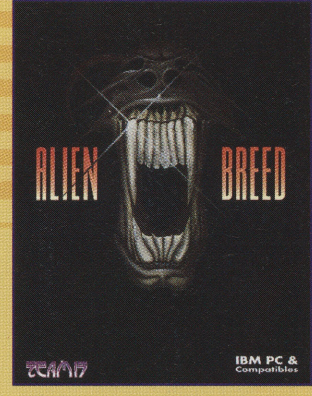
JURASSIC PARK
(SNES•GB•NES•AG•PC)
October Release



FLIGHT SIM 5 (PC)
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STARLORD (PC)
October Release



ALIEN BREED (PC•AG)
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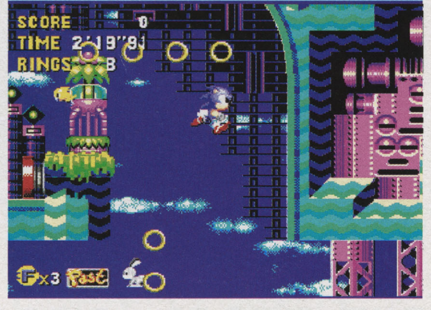
James Pond 3 **Lost Vikings** Maelstrom **Dungeon Master II** Super Darius II **Subwar 2050** Beneath A Steel Sky **Robocop v Terminator** Theatre Of Death **TFX** Microcosm **Galaxy Force II** Ys IV **John Madden** Goof Troop **Wolf Pack** Fatal Fury II **Man Enough** Winter Olympics **Hellfire**...



Edge's unique multiformat release schedule, covering the entire world of videogaming



***Top Racer 2*, the Japanese name for Top Gear 2 (testscreen, page 94), is perhaps a 'sequel too far' for developers, Gremlin. Its main innovation is the full-screen view for oneplayer mode (unlike above). But that *Top Gear* feel is sadly missing. As it stands it's in danger of fading into obscurity...**



***Sonic* CD at last. But is it too late? By the time it's out, dedicated platformers will have already discovered the many charms of Sega's newie, *Aladdin*. Someone should warn that irritating little blue guy that he might be in for a real fight this time**

E - Early, M - Middle, L - Late

Super NES

Date	Game Title	Type	Publisher	Country
01 October	Lost Vikings	platform	Nintendo	UK
08 October	Mystic Quest	RPG	Nintendo	UK
08 October	Nigel Mansell's GP	racing	Nintendo	UK
15 October	Vegas Stakes	simulation	Nintendo	UK
15 October	Battletoads	combat	Nintendo	UK
15 October	Suzuka 8 Hours	racing	Namco	Japan
29 October	Actraiser II	action	Enix	Japan
22 October	Goof Troop	action	Capcom	UK
- October	Macross Valkyrie	shooter	Zamuse	Japan
L October	Rock 'n' Roll Racing	racing	Interplay	UK
L October	Clayfighter	combat	Interplay	UK
09 November	Street Fighter II Turbo	combat	Capcom	UK
19 November	Yoshi's Safari	Super Scope	Nintendo	UK
19 November	**Top Racer 2**	**racing**	**Kemco**	**Japan**
M November	Might And Magic II	RPG	Elite	UK
- November	Sunset Riders	action	Konami	UK
- November	Zombies	action	Konami	UK
- November	Ys IV	RPG	Tonkin House	Japan
- November	Cool Spot	platform	Virgin	Japan
- November	J-League Cup Soccer	sports	Jaleco	Japan
- November	Pro Baseball '94	sports	Epic/Sony	Japan
L November	Fire Emblem	RPG	Nintendo	Japan
- November	Super HQ	racing	Taito	Japan
- November	Aladdin	platform	Capcom	Japan
12 November	Solstice II	platform	Epic	Japan
02 December	Plok	platform	Nintendo	UK
- December	TMNT Tournament	combat	Konami	UK

Mega Drive/Mega CD

Date	Game Title	Type	Publisher	Country
28 September	SF II SCE	combat	Capcom	Japan
15 October	James Pond 3	platform	Electronic Arts	UK
15 October	Columns III	puzzle	Sega	Japan
29 October	Lethal Enforcers (CD)	light gun	Konami	Japan
- October	Arislan (M-CD)	RPG	Sega	Japan
- October	Pebble Beach	sports	Sega	Japan
- October	Shining Force II	RPG	Sega	Japan
- October	Dyna Brothers 2	puzzle	CSK	Japan
- October	**Sonic (CD)**	**action**	**Sega**	**UK**
- October	SF II SCE	combat	Capcom	Japan
L October	F1 Circus CD	racing	Nihon Bussan	Japan

NOTE: game release dates are spectacularly unreliable

E - Early, M - Middle, L - Late

Mega Drive/Mega CD continued

Date	Game Title	Type	Publisher	Country
- November	Brett Hull Hockey	sports	Accolade	UK
November	Battle Mania	action	Vic Tokai	Japan
- November	Mutant L. Hockey	sports	EA	UK
- November	Virtual Pinball	simulation	EA	UK
- November	EA Soccer	sports	EA	UK
- November	Zombies	action	Konami	UK
- November	Lethal Enforcers	light gun	Konami	UK
- November	Lethal Enforcers (CD)	light gun	Konami	UK
- November	Castlevania	platform	Konami	UK
- November	Gunship	shooter	US Gold	UK
- November	Winter Olympics	sports	US Gold	UK
- November	Gauntlet 4	action	Sega	UK
- November	Robocop v Terminator	action	Sega	UK
- November	Sonic Speed Ball	action	Sega	UK
- November	Young Indy	action	Sega	UK
- November	Visionary	action	Sega	UK
- November	Gods	action	Accolade	UK
- November	Silpheed (M-CD)	shooter	Game Arts	UK
- November	Spider Man (M-CD)	action	Sega	UK
- November	Chuch Rock 2 (M-CD)	action	JVC	UK
- November	John Madden (M-CD)	sports	Electronic Arts	UK
- November	Dracula (M-CD)	adventure	Sony	UK
- November	Man Enough (M-CD)	strategy	Accolade	UK

PC Engine/Super CD-ROM² (H = HuCard)

Date	Game Title	Type	Publisher	Country
15 October	Power League '93 (H)	sports	Hudson Soft	Japan
- October	PC Cocoroon	action	Wave	Japan
29 October	Galaxy D. Gayvan	action	Intec	Japan
29 October	Dracula X	platform	Konami	Japan
26 November	Monster Maker	-	NEC Avenue	Japan
10 December	Bomberman '94 (H)	action	Hudson Soft	Japan
12 December	Martial Champions	combat	Konami	Japan
18 December	Fatal Fury II (18M CD)	combat	Hudson Soft	Japan
22 December	Ys IV	RPG	Hudson Soft	Japan
December	Super Darius II	shooter	NEC Avenue	Japan
- December	Emerald Dragon	-	NEC Avenue	
- Undecided	Marble Madness (H)	puzzle	Tengen	Japan
- Undecided	Super Fantasy Zone	shooter	NEC Avenue	Japan
- Undecided	Strider (CD-ROM²)	platform	NEC Avenue	Japan
- Undecided	Galaxy Force II	shooter	NEC Avenue	Japan
- Undecided	Mega Twins	action	NEC Avenue	Japan
- Undecided	Hellfire (H)	shooter	NEC Avenue	Japan
- Undecided	N. Warriors (CD-ROM²)	action	NEC Avenue	Japan
- Undecided	Gods	action	NEC Avenue	Japan

Neo Geo

Date	Game Title	Type	Publisher	Country
- October	Samurai Showdown	combat	SNK	UK
- Undecided	Art Of Fighting 2	combat	SNK	UK/Jap
- Undecided	Top Hunter	shooter	SNK	UK/Jap
- Undecided	Magician Lord 2	action	Alpha	UK/Jap
- Undecided	Reactor	combat	SNK	UK/Jap
- Undecided	Fatal Fury Special	combat	SNK	UK/Jap

PC

Date	Game Title	Type	Publisher	Country
01 October	Strike Comm. (CD)	flight sim	Origin	UK
09 October	Xmas Lemmings	strategy	Psygnosis	UK
14 October	Shadow Caster	RPG	Origin	UK
15 October	Innocent Untill Caught	adventure	Psygnosis	UK
19 October	Victory at Sea	simulation	Electronic Arts	UK
19 October	Labyrinth	adventure	Electronic Arts	UK
22 October	Turn And Burn	flight sim	Electronic Arts	UK
23 October	Lands Of Lore	RPG	Virgin	UK
– October	Sam and Max	adventure	Lucas Arts	UK

PC continued

Date	Game Title	Type	Publisher	Country
- October	Jurassic Park	action	Ocean	UK
- October	Rider Cup	sports	Ocean	UK
- October	TFX	flight sim	Ocean	UK
- October	Speed Racer	racing	Accolade	UK
- October	Xanth	shooting	Accolade	UK
- October	Spellcasting (CD)	RPG	Accolade	UK
- October	NHL '94	sports	Electronic Arts	UK
- October	Microcosm (CD)	action	Psygnosis	UK
L October	Lord Of The Rings (CD)	RPG	INterplay	UK
26 November	Hired Guns	action	Psygnosis	UK
- November	Rebel Assault (CD)	action	Lucas Arts	UK
- November	F14 Fleet Defender	flight sim	Microprose	UK
- November	Star Trek (CD)	adventure	Interpla	yUK
- November	Subwar 2050	simulation	Microprose	UK
- November	Bloodnet	adventure	Microprose	UK
- November	Dragon's Fear	RPG	Microprose	UK
- November	Mortal Kombat	combat	Virgin	UK
- November	Beneath A Steel Sky	adventure	Virgin	UK
- November	Kyrandia 2	RPG	Virgin	UK
- November	Terminator 2	action	Virgin	UK
- November	Un. Roughness	action	Accolade	UK
- November	Man Enough (CD)	strategy	Accolade	UK
01 December	F14 Fleet Defender	simulation	Microprose	UK
03 December	Pacific Strike	action	Electronic Arts	UK
03 December	Ultima 8	RPG	Origin	UK
15 December	Dragons Fear	RPG	Microprose	UK
17 December	Seawolf	stategy	Electronic Arts	UK
- December	Lemmings Pack (CD)	strategy	Psygnosis	UK

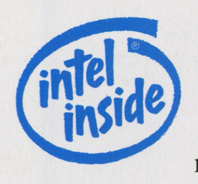
Amiga

Date	Game Title	Type	Publisher	Country
09 October	Xmas Lemmings	strategy	Psygnosis	UK
15 October	Globdule	action	Psygnosis	UK
15 October	Theatre Of Death	strategy	Psygnosis	UK
22 October	Perihelion	action	Psygnosis	UK
29 October	Benefactor	action	Psygnosis	UK
- October	Burnin Rubber	racing	Ocean	UK
- October	Jurassic Park	action	Ocean	UK
- October	Rider Cup	sports	Ocean	UK
- October	S. League Manager	sports	Ocean	UK
E October	Body Blows 2	combat	Team 17	UK
- October	Creepers	platform	Psygnosis	UK
- October	Theatre Of Death	strategy	Psygnosis	UK
- October	Prime Mover	simulation	Psygnosis	UK
- October	Innocent Until Caught	adventure	Psygnosis	UK
- October	Combat Air Patrol	flight sim	Psygnosis	UK
- October	Alien Breed 2 (A1200)	action	Team 17	UK
- October	Dracula	action	Psygnosis	UK
- October	Orbitus 2	RPG	Psygnosis	UK
- October	Apocalypse	shooter	Virgin	UK
26 November	Second Samurai	action	Ent. Int	UK
- November	TFX	simulation	Ocean	UK
L November	Star Trek	adventure	Interplay	UK
10 December	Dennis	action	Ocean	UK
10 December	Microcosm (CD-32)	action	Psygnosis	UK
10 December	Puggsy	action	Psygnosis	UK

Magazines

Date	Game Title	Type	Publisher	Country
07 October	Superplay	SNES	Future	UK
07 October	Sega Power	SEGA	Future	UK
14 October	Amiga Power	Amiga	Future	UK
21 October	TOTAL!	Nintendo	Future	UK
21 October	MEGA	Mega Drive	Future	UK
28 October	**Edge** 3	multiformat	Future	UK
11 November	PC Gamer	PC	Future	UK

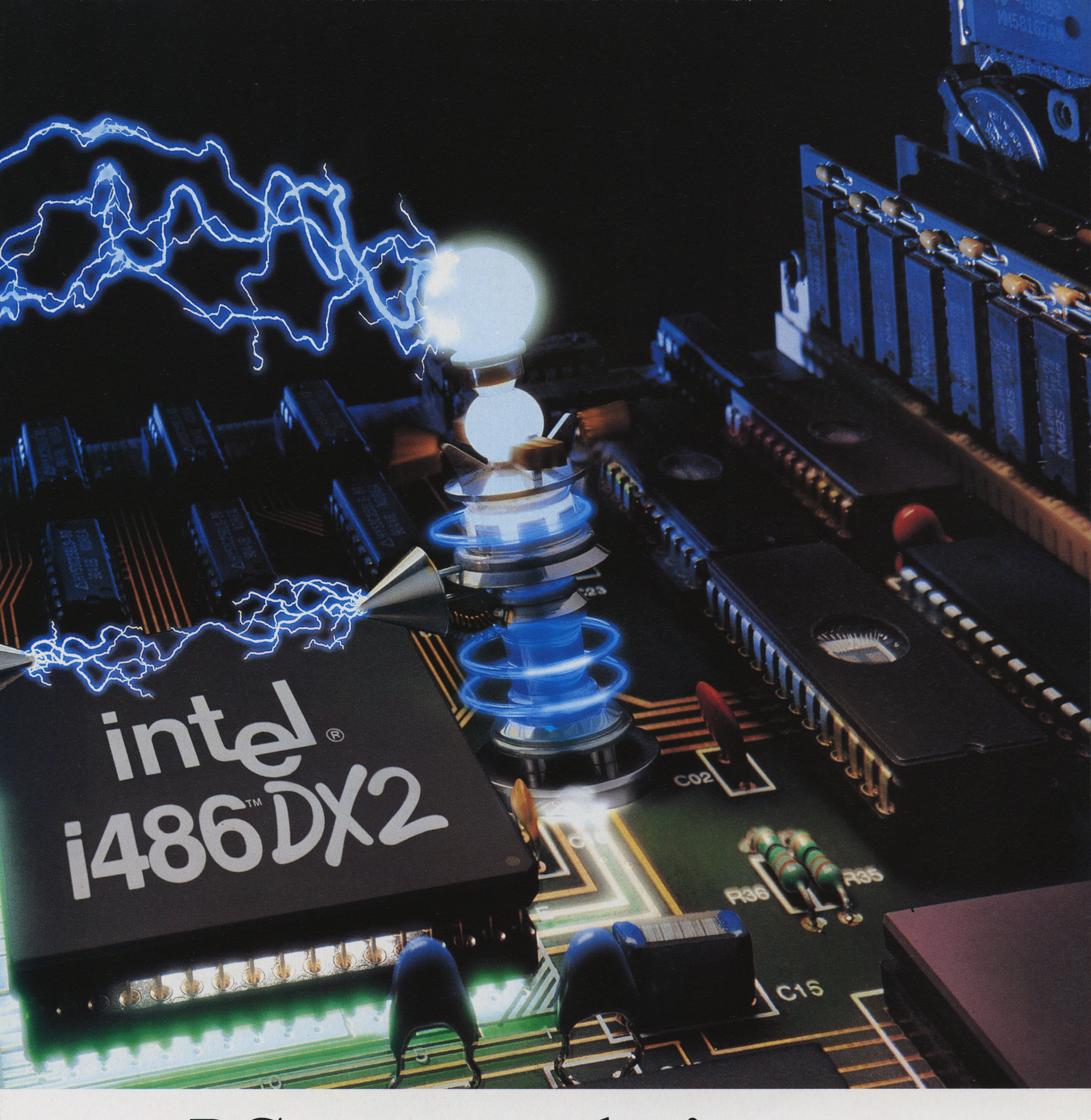
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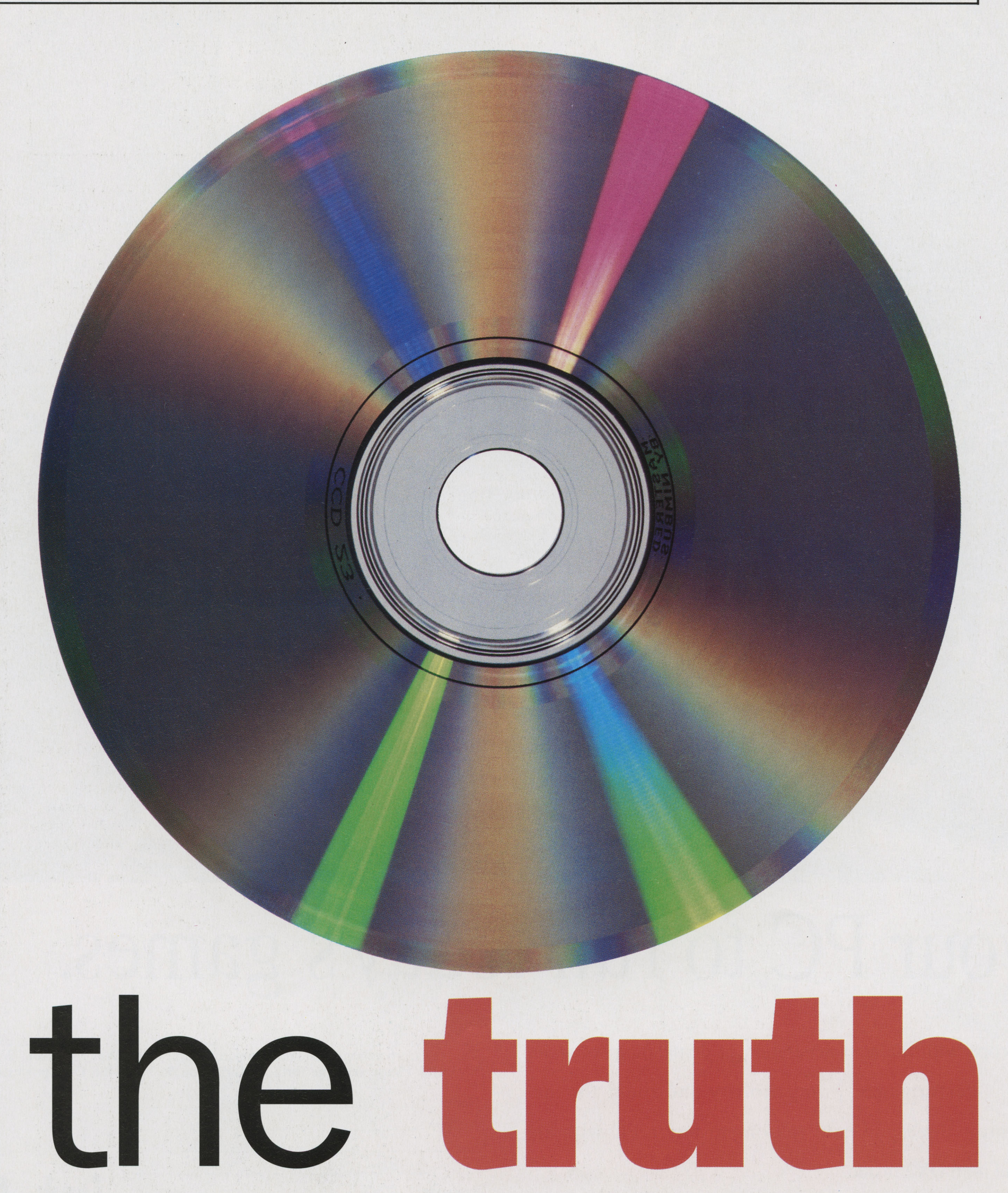
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CD-ROM:



the truth

Photograph: **Peter Canning**

Everyone's talking about CD-ROM. And every games system is going onto CD format. But no-one's asking why CD games offer little more than flashy intros and sounds, and why the interactivity they promised has yet to arrive. **Edge** reveals all

Compact disc is not the saviour of the videogame. The CD is a storage device – and not a particularly clever one at that. It can hold 650 megabytes of information, but most disc drives can only read 150K a second. Even double-speed drives (300K a second) are no match for an average hard drive which transfers at about 800K a second.

You can't get information off disc fast enough to feed today's data-hungry machines. You can't instantly switch between sets of data: it takes time for the laser to move from one point on the disk to another. You can't write information to a disk and they're a lot less robust than cartridges or even floppy disks.

The truth is that you can do nothing with a CD, except store information. It is dumb and blind and stupid. And, contrary to popular belief, a CD in itself does nothing to increase the quality of the graphics. So why is the videogames industry pinning its hopes and dreams on CD, with talk of multimedia, full-motion video and interactive movies?

When CD-ROM really takes off, expect gameplay to take a nosedive

Size is everything with today's games technologies. Even though there's nothing you can do on CD that you can't do better on cartridge, to make a cartridge with the same amount of memory as a CD would cost roughly $13,000. CDs are also portable – it's doubtful whether a 5,200,000 megabit cart would fit inside a CD case. So CD represents the only viable mass storage medium.

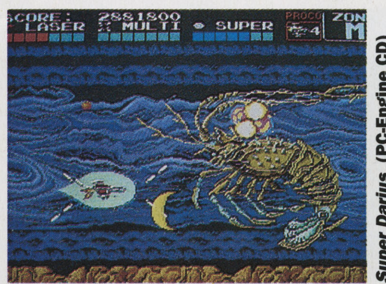
Unfortunately, it's got off to a bad start. So far, CD games have been either cart games stored on disc (and you can store an awful lot of cart games on a CD), or games that follow a boring point-click structure. Like interactive encyclopedias, the game waits until prompted – you've clicked on the right icon or performed a certain task – before loading in another graphic sequence.

This is a fact **Mark Lewis**, European president of Electronic Arts, concedes: 'The first generation of CD product has come and gone and it was called shovelware. Simple as that. As a medium those shiny little discs are thrilling, but so far the products have fallen pretty far short of the potential.'

But really, after all the hype behind the CD format, the truth is that the industry has just not picked up the new customers it was hoping for. That doesn't mean that the format is flawed, just that consumers have been wise. And it's the names that got into the market first that

Continued next page

When it comes to games, the added attraction of CD-ROM is often misleading. On the one hand there's the potential for games to be huge and even include special effects like full-motion video. But on the other, the data can't be accessed quick enough to provide fast gameplay – a fact borne out by the dearth of disappointing CD-ROM games we've been subjected to so far. It seems to be taking an eternity for game designers to get to grips with CD-ROM, and getting the gameplay to match the visuals is the proving to be a constant uphill struggle. Here's a mixture of the relatively good, and the (very, very) bad CD-ROM offerings across all formats from the recent past...



***Super Darius* (PC-Engine CD)**
A great CD shoot 'em up, that's particularly impressive in light of the tiny RAM buffer it runs in – 64K in the Engine's original CD ROM² system. With all 26 levels from the original *Darius* coin-op, *Darius II*'s imaginative boss aliens, and some Dolby Surround music, *Super Darius* emulates the coin-op well and makes the most of a dated hardware system

techview: multimedia



3DO specifications

Manufacturer:	**Panasonic**
CPU:	**32bit RISC 12·5 MHz + coproc**
Colours:	**16·7 million, 32,000 onscreen**
Memory:	**3Mb RAM**
Resolution:	**640 x 480 simulated**
Graphics hardware:	**Twin Cell Engines**
CD data transfer:	**150K-300K/second**
Sound:	**16bit DSP 44·1KHz**
FMV:	**MPEG1/2 option**
Release:	**US - October, UK - Spring**
Price:	**$700 (£475)**

3DO is the most promising piece of kit in terms of both specs and potential, but the high price of the Panasonic unit will keep this firmly in the early innovators' market for the first six months, until Sanyo and AT&T enter the market with other 3DO systems. If 3DO succeeds in becoming the standard it's hoping to be, the unrivalled software support could deliver some seriously great games. The machine to watch.

Continued

have aged quickest. Even the perennially bullish Sega is not denying the lack of gameplay in some of the existing titles for the Mega CD system.

Head of software development at Sega US, **Tom Reuterdale**, spoke to **Edge** about gameplay on the Mega CD.

TR 'I think that there may be some disappointment with the first batch of CD games, but generally I don't think people's expectations were very realistic.'
Edge Do you think the media attention may have actually counted against you?
TR 'When a new platform comes along, it gets a lot of press and there are a lot of rumours. People's expectations are driven by the wrong sort of influences.'
Edge But why did the first Mega CD releases fall so far short of the mark?
TR 'Obviously in the first round of titles developers are groping around a bit to try to understand the new technology, and the result is games that don't push the hardware to its limits.

'But then most people are still trying to actually find its limits.'

Edge What about the low quality of many releases?
TR 'I think that on our Mega CD the best games are things like *Night Trap* and *Sewer Shark* – these show how well you can use video sequences, but it is true to say there has been a wide variation in quality.'
Edge What does the future hold for CD-ROM games at Sega?
TR Gameplay is the most important and elusive element in any title, but I think it's dangerous to decry developers for concentrating too much on the graphics and intros. You have to pay close attention to details like that because you have to show added value – CD games have to be an expanded experience.

'In the future I think you'll see better advantage taken of video. Data access is the key issue, and we are working out the best way to lay out the information on the disc for high-speed retrieval. This makes things much smoother, a lot more seamless than those you're seeing at the moment. The Mega CD version of *Jurassic Park* will be like that. I wouldn't say it's the first half of the second generation. Perhaps it's generation one-and-a-half.'

CD-ROM's big plausibility problem is its interactivity. Games on CD are more like animations with pauses than genuine videogames. Once a graphic scene has been 'filmed' on CD there's little else you can do with it.

With a 3D polygon game, the programmer can map out a 3D world and let the player move where he likes. But on CD you have to create every single view of every single location: players can visit only those places that the camera (or artist, programmer) has been.

As Virgin's new media manager **Steve Clark** explains, 'with CD titles you're dealing with rendered graphics, and they can't be generated in real-time so you're not free to roam the game.'

Basically, as far as genuine, multilevel interaction is concerned, video footage is a dead loss. It's incredibly linear, and if you



***Microcosm* (FM Towns)**
Psygnosis' *Microcosm* could very well turn out to be the *Shadow Of The Beast* of the nineties. It's flashy, slick, and polished, but try and find a decent game in there and you have a problem. It's an ambitious shoot 'em up with an incredible intro and animations, but with little gameplay to speak of. Like *Shadow Of The Beast*, though, it'll sell loads because it looks wonderful



***Nightrap* (Mega CD)**
The controversy surrounding *Night Trap* was probably more than Sega ever bargained for, and probably more than they could have ever hoped for, too. While *Night Trap* is one of Sega's better games from its initial crop of US and European releases, it doesn't last that long, and quickly gets repetitive

try to introduce different outcomes according to the decisions you make, you multiply the number of video clips you have to film and store exponentially. Also, accessing data on CD is very, very slow – and you need to load up data well in advance to prevent mind-numbing five second delays between pressing a key and CD data appearing onscreen.

With CD-ROM you just setup pre-rendered graphics and then guide the players down the paths you've created. This improves when you provide more paths and more options. But generally this isn't happening. The reasons? Firstly CD hardware is too slow to access data fast enough. The second reason is purely economic; as Steve Clark explains, 'You can provide more options, but that costs money and the economic reality is that there aren't a huge number of CD machines out there at the moment.'



Photograph: Peter Canning

Few would disagree that the big break that the CD-ROM format needs is the ability to incorporate real-time rendered graphics. But we're not likely to see that until the end of the decade. And the current limitation on what can happen in real-time is the reason 'interactive movies' aren't as appealing as the big publishers would have you believe.

But it's not the format, it's the hardware that lets the games down. That's why the best example of CD products at the moment are being seen on high-power PCs and Apple Macs. But many think that this emphasis could begin to shift to consoles over the next 2-3 years. According to Virgin's Steve Clark, this process will only start when programmers get something 'a bit better than the Mega CD' to work on. 'What I'd like to see is something like the 3DO machine, but with MPEG built-in and with a pricetag of under £300'.

As far as genuine multilevel interaction is concerned, video footage is a dead loss

Clark admits that to date Virgin hasn't produced the highest quality product for CD; 'We're seeing a lot of shovelware, and we've done a bit of that ourselves – but we don't pretend it's anything else.'

Virgin were the producers of the PC version of one of the few games that made a big splash on CD-ROM format – *The Seventh Guest*. In this game you move around a deserted mansion, solving puzzles as you go, and meeting ghostly animated figures. The graphics are without doubt excellent – they were all rendered in *3D Studio* on the PC, and the game consequently takes a heavy toll on hardware – a minimum of a 486SX

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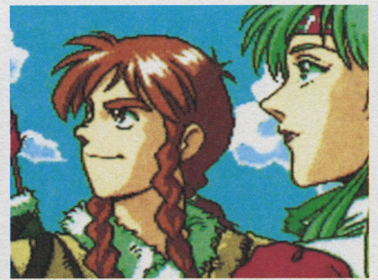
Amiga CD32 specifications

Manufacturer: **Commodore**
CPU: **32bit 14MHz**
Colours: **16·7 million, 256 onscreen**
Memory: **2Mb**
Resolution: **320 x 256 – 1,280 x 512**
Graphics hardware: **AGA chipset**
CD data transfer: **150K-300K/second**
Sound: **Stereo 4 channel 8bit**
FMV: **MPEG1 option**
Release: **Early September**
Price: **£299**

Commodore's first realistic attempt at taking on the console heavyweights could do well in Europe. And for the competitive price, it certainly pulls some decent punches with its 1200-based AGA chipset and MPEG-upgradable motion video capabilities. Commodore's CD32 could, and deservedly should, give the Mega CD a well-needed kick up the backside. And let's hope it lures back some of those deserting Amiga developers, too.



***The 7th Guest* (PC–CD)** **This much-delayed 2 CD game really started the ball rolling towards movie-style games. But along with the great graphics and stunning sound came the perennial flaws – restricted freedom of movement and a rather simplistic level of interaction. That's the problem with graphics streamed off a CD. They'll always be like *Dragon's Lair*. And we all know how little fun that can be**



***Lunar: the Silver Star* (Mega CD)** **While the US and Europe waits impatiently for decent Mega CD titles, the Japanese have been able to get their teeth into polished *Final Fantasy*-style RPGs like *Lunar* from *Silpheed* developers Game Arts. *Lunar* uses stunning visuals, with beautiful characters and a well illustrated storyline. A US version is in the pipeline from Working Designs**

techview: multimedia



Photograph: Peter Canning

Mega CD specifications

Manufacturer:	**Sega**
CPU:	**68000 12·5MHz**
Colours:	**512, 64 onscreen**
Memory:	**768K RAM**
Resolution:	**320 x 200**
Graphics:	**80 sprites**
CD data transfer:	**150K/second**
Sound:	**8 channel PCM**
FMV:	**CinePak (soon)**
Price:	**£370 (inc MD)**

Sega's Mega Drive is just beginning to show its potential but suffers from a high price tag and some uninspiring software. Motion video is the real bugbear (just 16 colours), but this will be improved to 128 with CinePak. The price Sega paid for entering the CD race early on is all too clear – 16bit technology just isn't geared up to do anything special with CD-ROM. However, Sega's market presence in Europe can't be ignored, and games *are* improving gradually.

Continued

25MHz PC with ultra-fast graphics is required, and that's pretty serious kit. But does the game actually do anything new? **Peter Molyneux**, MD of Bullfrog, is one of those who think not. 'It's the classic example of a game built around graphics. The whole thing is designed around a series of rendered graphics and you have to solve different puzzles to unravel the sequences. If the idea of CD is to attract new consumers with promises of movie-quality graphics, then *The 7th Guest* has undoubtedly done more harm than good – you need an IQ of 360 to solve the puzzles, so most of the game is inaccessible to most people. Anyone that's new to games will just have their suspicions confirmed that computer games are crap.'

So why does *The Seventh Guest* ultimately fail to excite? Chiefly it's because CD-ROM cannot store enough alternative plotlines or access the information quickly enough to seamlessly guide you from one scene to another. And once you've 'experienced' a graphic sequence a few times you don't want to do it again.

CDs may be vast, but – and it's a big but – CD data access is slow. Very slow. What's the use of 650 meg of space when you can't quickly break in and access parts of it? The length of time taken to load a specific block of data from any drive consists of two parts – the time taken to find it, and the time taken to transfer it. In both respects, CD-ROMs are dismally, pitifully, appallingly slow.

Firstly, there's the seek times. CD-ROMs store data in a single track, a spiral starting at the centre of the disc and ending at the edge. There's a lot more stuff to search through and it's in a format which takes ages to search. Then there's the data transfer times. CD-ROM drives were born out of existing CD technology, which involves reading data off the discs at a specific rate (the CDs are rotated faster as the heads near the centre, so that the information transfer rate remains constant). This translates to 150K of data per second on a CD-ROM drive. And that really is pitiful.

You can get a double-speed drive, and the eagerly-awaited 3DO machine will also run at double-speed. Even so, 300K per second is still weak, especially since those

CD-ROM reliability

Many claims were made about the reliability of audio CDs when they first came out, that you could drill holes in them, use them as beer mats and so on. These have all been proved wildly optimistic. Audio CD players often contain additional circuitry which can fudge over damaged sections of the CD, but only by guessing at the missing information. Computers are much more demanding than the human ear. For a computer, every single bit (literally) of information has to be just so or it'll throw a fit. So while CDs are a tough and reliable medium, they are a long way from being indestructible. And because even the slightest speck of dust can destroy data (each bit of data is stored on an area no more than a thousandth of a millimetre across), CD-ROMs need some fancy error-checking systems to keep things running smoothly. This can typically take up 120Mb of the disk.

Reliability in use, compared to floppy or hard drives, is hard to judge at the moment because simply not enough people have them or have used them for long enough for any major problems to show up.



***Escape From Cyber City* (CD-I)** **The animation in this one is particularly lovely. And it should be – it's pulled off the CD in exactly the same way as the *Dragon's Lair* graphics were, and it's been grafted together for two anime films (Galaxy Express 999 and Adieu Galaxy Express). It's just as tedious as Dragon's Lair, too. Watch a bit of animation, and react with a joypad movement at just the right moment**



Diggers (Amiga CD32) **A *Boulder Dash*-type excavation game, this manages to include a fairly complex and enjoyable blend of trading and strategy. But for a flagship CD32 title it's nothing special. If the graphics in *Diggers* use 256 colours then there are about 256 shades of brown. It's solidly designed, but it's hardly the 'killer app' the machine desperately needs**

juicy cinematic-quality graphics we're all looking forward to could take several seconds to pull off disc.

To put this in perspective, conventional hard drives typically have access times in the order of 16 milliseconds (500 times faster than a CD-ROM) and data transfer rates of 800K/second (six times faster than CD-ROM). CD-ROMs are not like big hard disks. You scarcely notice your hard drive working, it's largely transparent. A CD-ROM is like stepping back to the stone age.

To make matters worse CD-based consoles are up against traditionally cart-based machines. A cart-based machine is a lot cheaper to make and a lot cheaper to buy. And because cart data is stored on ROM, it is found and retrieved with blinding speed. Access time is typically less than 100 nanoseconds (a tenth of a millionth of a second) and data is transferred so fast it's not worth thinking about – several megabytes per second. We can expect to see CD drives get faster and faster – there's even talk of a quadruple-speed CD player – but it's hard to imagine them coming close even to the basic hard drive with the technology around today.

This means that program designers must be very clever. They have to distract you with nice graphics while they frantically drag data off the disc. They have to anticipate everything you do, loading tons of data well in advance, because by the time you've made your mind up, it's too late. This is seriously bad news for gameplay, because the further you get from linear gameplay on a CD title, the tougher it is to program. Dedicated CD players can multitask, finding and loading data all the time. But you've got to send them off to look for it long before you think you're going to need it. So programmers on CD need to be better than they've ever been before. For example, when you die in Psygnosis' *Microcosm*, a message that comes up saying 'Approaching Critical Mass'. This is just an orange screen with big letters flashing and a sound in the background: it only takes up a few K, so it's held in the machine all the time. Whenever you die, it bungs it up on the screen while it restarts the whole system and tells the CD to forget what it's doing at the moment, go back and find where the particular death film is and start playing that. And that can take anything between a fraction of a second to a mind-numbing

CD is dumb and blind and stupid; it does nothing to increase the quality of graphics

Continued next page



Photograph: Peter Canning

PC CD-ROM specifications

Manufacturer:	**Various**
CPU:	**PC: 8MHz - 66MHz**
Colours:	**16·7 million, 256 onscreen**
Memory:	**1Mb - 16Mb**
Resolution:	**320 x 200 - 1,024 x 768**
Graphics:	**Various modes**
CD data transfer:	**150K-300k/second**
Sound:	**depends on board fitted**
FMV:	**unassisted**
Price:	**CD drive £150 - £500**

A fast PC with a CD ROM drive, while an expensive setup, currently offers a powerful gamesplaying platform which is starting to deliver some really impressive software. The sheer size of many existing PC games (10, 15, 20 disks) is a problem easily cured by the CD-ROM format, and for the foreseeable future PC-CD will remain a well supported platform with highend machines running software good enough to keep up with dedicated CD systems like 3DO.



***Thunderhawk* (Mega CD)**
The saviour of the Mega CD? Not really, but it's a fun adaptation of the Amiga original that throws into sharp relief the vast majority of Sega's current CD games. For a start there's decent use of the scaling and rotation functions and some great partial motion video on the intro. But essentially, it's a shoot 'em up whose appeal will wane quicker than most people realise



***Inca* (CD-I)**
Arguably the first decent release for the CD-I system is a french adventure game. And we all know how strange they can be. *Inca* takes you on a voyage of discovery through space, and calls on arcade and puzzle elements. And it's not too bad, using some decent movie-style effects and gameplay that requires a bit of thought

techview: multimedia



Photograph: Peter Canning

Edge So is there no hope left for the CD-ROM?

PM 'I think that in future the storage space has got to be used for more than just graphics and sound. It's got to store more data, more variants – things that give the game more depth rather than just a prettier surface. That's what we've tried to do with the CD version of *Syndicate* (due in November) and a couple of CD specific games called *Theme Park* and *Creation*.'

CD-i specifications

Manufacturer: **Philips**	
CPU: **68070 15·5MHz**	
Colours: Up to **16·7 million onscreen**	
Memory buffer: **1.5Mb**	
Resolution: **384 x 280 - 768 x 560**	
Graphics: **various modes**	
CD data transfer: **170K/second**	
Sound: **ADPCM 8 channels**	
FMV: **MPEG1 option**	
Price: **£400**	

Philip's home entertainment system using the relatively impressive but dated CD-i technology has, ever since launch, had problems with a high price, poor marketing, and particularly, a lack of decent games. However, Philips have just launched a sub-£400 redesigned machine with excellent digital video quality (with a £150 MPEG cart) and some good games are coming, too. Just what's needed to save CD-i from the technology scrapheap, in fact.

Continued



three or four seconds.

Any programmer who can produce a smooth, fast-moving, seamless game within limitations like that is a real hero.

The real question is, are the graphics in a game worth sacrificing the gameplay for? Once again it's Bullfrog's Peter Molyneux who thinks not. He spoke to **Edge** about where the current crop of CD-ROM games is going wrong.

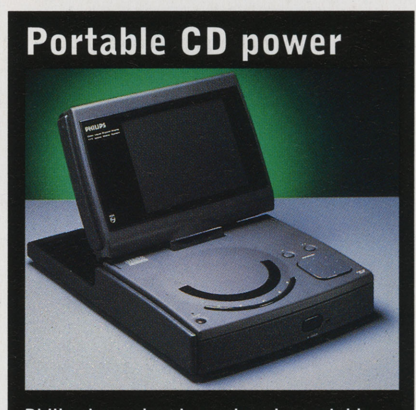
PM 'Some programmers seem to think that if a game looks good, it will sell. They think, 'Well, we've spent two years putting these graphics together, what do we want to bother about gameplay for?' – that's the feeling I get from most of what I've seen.

'I would be hard pressed to name a single decent CD game. I wouldn't say that the first batch of CD games have been disappointing. I'd say they've been shite, absolute crap. That's certainly true of Mega CD games, CD-i games and most PC CD games. The best selection of a bad bunch are games for the FM Towns, but that's only because it's been out longer and they've thrown loads of money at it.'

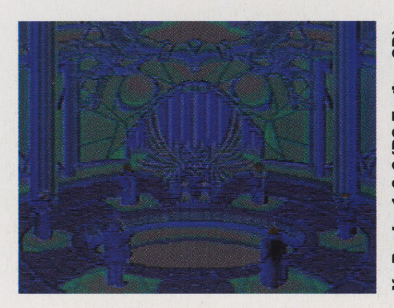
One of CD-ROM's abiding virtues is that thanks to the fact it was pioneered by the music industry, it is a cheap format. The drives have to be a bit more complicated than standard audio drives, but you can now get a PC CD-ROM drive for £200 or less, and the Mega CD is only £270. More than that, though, the disks themselves are cheap. They cost the industry around 50p each.

The only medium that's cheaper is floppy disks (around 25p). Carts cost the publishers anywhere from £5 to £12, depending on the size of the game and the machine it runs on. Bearing in mind the

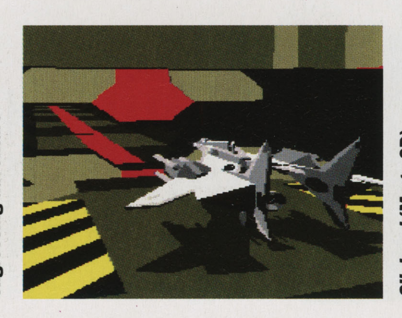
Portable CD power



Philips have already produced a portable CD-i machine for the Japanese market (above). The bad news is that it's much bigger than a Sony Discman and is aimed firmly at the corporate market. The reason? The 6-inch colour LCD screen takes the price up to a hefty £1,300. Still, if hand-held TVs can be made for under £100, and Discmans for just a little more... portable CD-ROM is just a matter of time.



Ys Books 1 & 2 **(PC Engine CD) This epic *Zelda*-style overhead action RPG has won many fans in both Japan and the US (and on import in the UK) with its excellent storyline and superb ingame stills and speech. In fact, it's two games in one, which makes it better value than most CD-ROM games. The game graphics are simplistic, sure, but for the old CD-ROM² system it's an immensely engrossing adventure**



Silpheed **(Mega CD) Sega would probably have you believe this is a *Starfox* beater, and Game Arts' use of CD for storing thousands of frames of 3D polygon graphics is a new approach for sure. While the background visuals are way ahead of the Super FX's polygons, the game quickly degenerates into a simple *Galaga* clone. A good effort, but ultimately flawed**

vast storage capacity of a CD, the medium itself, in pence per megabyte, is ludicrously cheap. Around 0.08p per megabyte, to be precise – which makes it one ten-thousandth the cost of ROM chips.

But how much of this cost saving will be passed on to games buyers? Well, don't hold your breath for a free games bonanza on CD. Remember that games already cost too much. According to the publishers, they cost just enough. Well, they would say that, wouldn't they? They claim they have to recoup the costs of developing the software and those of producing and distributing the game.

Software development costs are not necessarily any higher for a SNES game than an Amiga game, say, but while the floppy disk the Amiga game comes on costs the publishers about 50p, the cart that the SNES game comes on can cost £10.

So if the cost of the medium comes down – as it would if a game was published on CD (about 50p a throw today) – we could surely expect to see cheaper games, couldn't we? If you believe that, you'll believe anything. First of all, there's the question of development costs. A publisher may well argue (probably quite rightly) that the programming effort involved in producing a 650Mb CD blockbuster is much greater than that in producing a 1Mb cart game. Bear in mind, though, that the main value of the CD format is that it can store better graphics and sound, and more of them. In fact, fundamental gameplay and depth is likely to get worse, not better.

CD-ROM's real strength is its ability to store film-quality sequences. And it's not much good at anything else. So on CD we're going to see a lot of vaguely interactive 'films', and not much else.

That's the easy route with CD-ROM – no more game, just more gloss



Photograph: Peter Canning

Anyway, don't be surprised if CD releases start costing more, not less. Publishers will judge their prices from the mood of the marketplace – they will charge what they can get. And the argument that you're getting 650Mb of game instead of 1Mb is pretty powerful.

On the other hand, CD developers like Philips are aiming to break into (indeed, create) a new market with systems like CD-i. And you don't do that with high prices. In fact, many of the current CD-i titles are £30 or less. It's a similar story on the PC. Massmarket titles are typically around £40 – no more than comparable software supplied on floppies.

But with CD software, it may be harder than ever to judge value. After all, a big Amiga game may need two or even three disks. A big SNES game may need a 2Mb cart. These things can be measured –

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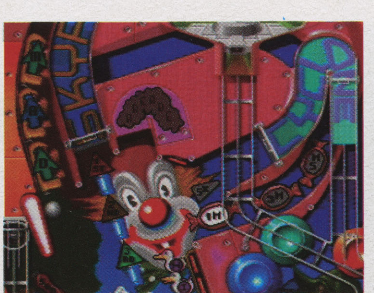
FM Towns Marty specifications

Manufacturer:	**Fujitsu**
CPU:	**32bit 16MHz**
Colours:	**32,768 - 256 onscreen**
Memory buffer:	**2Mb RAM**
Resolution:	**352 x 232**
Graphics:	**Sprite engine: 1,024 sprites**
CD data transfer:	**150K/second**
Sound:	**6 channel FM, 8 channel PCM**
FMV:	**unassisted**
Price:	**around £500 (Japan)**

The FM Towns series have only ever been released in Japan and this console version is based around a low-end Towns complete with a console style-pad. The 150K/sec CD drive limits the speed of the machine when compared to most of the new CD machines, but for traditional 2D sprite handling the Marty can't be beaten, despite the small windows the games usually run in. It is likely to be overtaken by newer 32bit technology for games, and sadly it has little future outside Japan.



***JB Harold Murder Club* (PC-E CD)** **Hudson Soft/Riverhill Soft murder mystery games are perfectly suited to CD-ROM and this one's presented rather like an TV detective series. The graphics look fuzzy and digitised, but the speech is outstanding – it's loaded into the 64K RAM at intervals instead of being played from the CD. The Japanese game has an option for English speech, but a US version is available**



***Pinball Fantasies* (Amiga CD32)** **One of the first CD32 games is Digital Illusions' sequel to *Pinball Dreams*. Sadly, it's been hastily translated, using very little of the AGA graphics functions and storage space of CD. The 256 colours aren't used well and the soundtracks are disappointing next to *Dreams* on the Amiga, but it plays extremely well. Just like the two disc Amiga version, in fact**

techview: multimedia



Photograph: Peter Canning

PC-Engine CD-ROM² specifications

Manufacturer:	**NEC**
CPU:	**Z80 7·16MHz**
Colours:	**512 palatte, 512 onscreen**
Memory buffer:	**256K RAM**
Resolution:	**320 x 224**
Graphics:	**64 hardware sprites**
CD data transfer:	**150K/second**
Sound:	**Stereo 6 channels PCM**
FMV:	**unassisted**
Price:	**£250 - £300 (import)**

Dated it may be, but the Super CD-ROM² system for the PC Engine still manages to outrun the Mega CD with its highly playable arcade action games. But, while it's certainly beaten the Mega CD in Japan, the Turbo Duo still lags way behind Sega and Nintendo in the US, and a UK or European release seems less likely by the day. The forthcoming 16 meg arcade card should keep the system going, but new 32bit CD-ROM games will soon leave the system standing.

Continued

but although big new releases like Virgin's *The 7th Guest* and Psygnosis's *Microcosm* actually had to be compressed to fit onto CD, others – especially hastily-converted existing titles – aren't likely to. And there's no way that you can check how much of the CD's 650Mb of space has been used.

This whole business of value will be a tricky one to judge. Which costs most to produce – cartoon backgrounds and sprites created from scratch on a computer, or real video footage and audio?

CD-ROM has its limitations, but the advantages of the raw format still seem overwhelming – it's a cheap, robust medium with massive capacity, which is also practically unpiratable. But CD-ROM's principal advantage – its immense storage capacity – could also be its downfall. This capacity is already redefining the games you play. Ultimately, it will quite probably change them for good. And you won't necessarily like it.

A CD-ROM lets you store massive graphics, animation and sound files. So massive in fact that it's not really practical to load them into RAM to do things with them. It's not really necessary, either, since they can be 'played' directly from the CD.

And that's the key word. 'Played'. A CD-ROM drive isn't really a drive at all. It's just a player controlled by the host computer. A decent game – like a 3D simulator in a real 3D computer world – produces an infinite variety of results, all depending on the user's input. A CD can only offer a handful of possible outcomes – and those will have been predetermined by the artist, film-maker, the graphics workstation and/or the programmer.

And that's not the way it might be with CD-ROM. That's the way it already is.

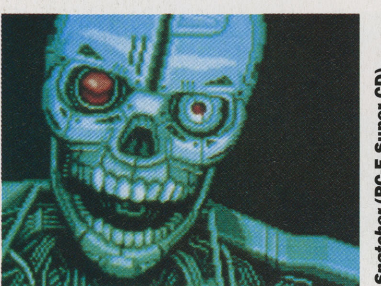
In the short to medium term, we can expect software publishers to produce games with ultra-high-quality sound, digitised real-life graphics and even moving digitised footage (as in the Mega CD's *Night Trap*). But with boring and linear gameplay. That's the easy route for publishers. No more game, just more gloss.

By contrast, the best conventional computer games invent the world from one second to the next as they go along. A simulator which handles 3D objects in a 3D world lets you go where you like, explore what you like. Will CD games ever offer this level of interactivity? Probably not: you can't possibly film and then store every possible viewpoint, every possible angle on even the smallest 3D world. The only way to create a real 3D world is for the hardware and software to work it out as they go along. Let's hope CD-ROM in the future doesn't just offer programmers the easier, but far more shallow, alternative.

Compare the visually lush but utterly vacuous *Dragon's Lair* with any old platform game – *Tazmania*, for example. *Tazmania* is what you might call a half decent computer game, while *Dragon's Lair* is little more than an animation with pauses. When CD-ROM really takes off, expect gameplay to take a nosedive. Sad but true.

The potential is breathtaking. The reality may be breathtaking for a very different reason.





Snatcher **(PC-E Super CD)**
This grisly *Bladerunner*-style adventure based on a Japanese comic puts you in the shoes of Gillian Seed, a tough 'junker' whose job it is track down a Snatcher – a sort of metallic bioroid creature that invades a futuristic city killing humans and climbing into their skin. Smart graphics and sound, but the Japanese text scuppers the gameplay for westerners. A US version is in the pipeline



Day Of The Tentacle **(PC-CD)**
The latest graphic adventure from George Lucas' stable improves signiticantly on the non-CD version by including full digital voices throughout. Like an increasing number of PC CD games every voice belongs to an actor instead of having text appearing on the screen, and like most Lucas Arts games, it's also brilliant. Why aren't all CD games this good?





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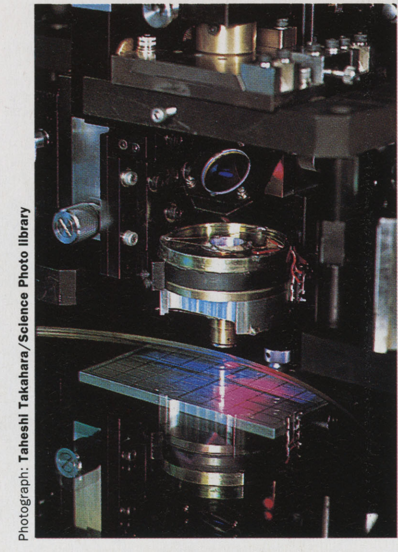


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CD-ROM: the facts

All the other data formats will have something to fear when CD-ROM grows up. **Edge** investigates



Photograph: Tahesh Takahara/Science Photo library

A powerful laser is used to record the data on a metal master disc coated with photoresistant plastic

CD-ROM process

Data transfer

The first task in making a CD-ROM is to get your data to the disc manufacturers. This might sound easy, but you've got 650Mb of data and you can't use floppy disks. Nimbus Information Systems, the UK's principal CD-ROM manufacturer suggests either magneto-optical disks, nine-track tape (the old half-inch standard used by mainframes the world over), or 'Exabyte', a data machine format that uses highgrade 8mm video tapes – one of these tapes can hold 1·2 Gigabytes, double CD-ROM capacity.

Formatting

CD-ROMs have to be formatted, just like any other disk drive. The most popular standard is ISO 9660. All PC-based CD-ROMs these days use this format. Once formatted, this data is now an 'image'.

Simulation

Manufacturers can simulate an image. What this means is that they can run this formatted CD-ROM data from a hard drive, as if it was a finished CD-ROM. Pretty essential stuff if you want to make sure it actually works. A useful alternative is a proofing service, where you're supplied with a sample CD for testing.

Pre-mastering

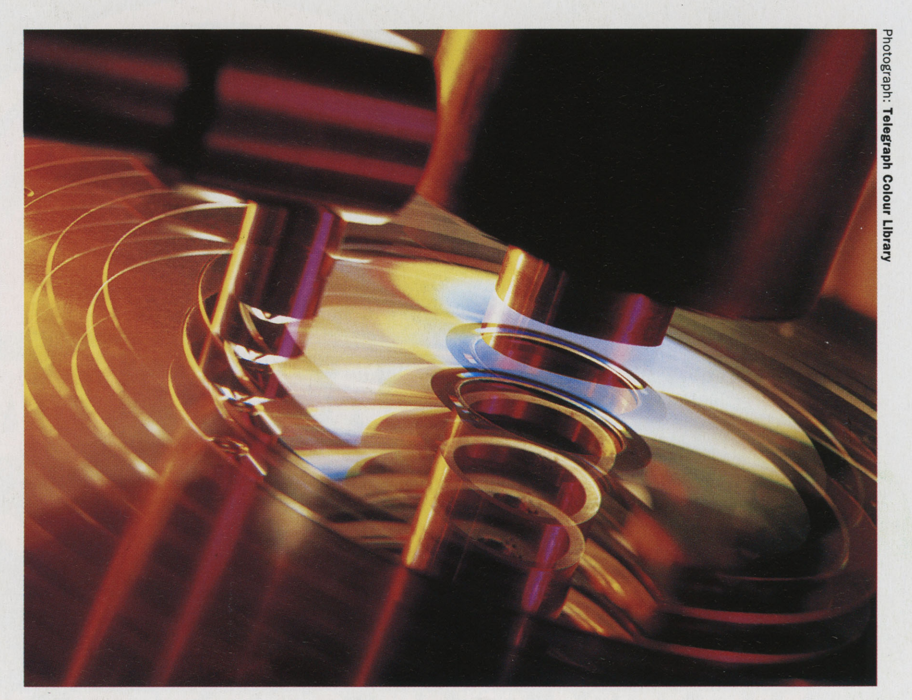
A CD-ROM is more than just a collection of files slung onto a disc. Before the disc can be mastered it needs headers, synchronisation bytes, error correction and error detection codes. But luckily all this goes on behind the scenes.

Mastering

This takes place using a mastering lathe. A powerful laser exposes the finished image onto a master disc. This is developed, plated and used to produce a press stamper made out of pure nickel. The whole process has to be carried out with the utmost precision in an ultra-clean environment. A single particle of house dust would wipe out many K of data.

Replication

This nickel stamper is attached to injection-moulding machinery, and the discs are pressed just like vinyl LPs. After the discs have been moulded they are metallised (to reflect the laser) and then lacquered, to protect the metallised layer.



Photograph: Telegraph Colour Library

The stampers used to press discs are constructed out of very, very pure nickel. Just one grain of house dust would corrupt many kilobytes of data at this stage in the production of a CD-ROM

Will the CD-ROM revolution spell the death of every other format? At the moment that's not likely, because CD-ROM drives are (a) read-only, (b) too slow.

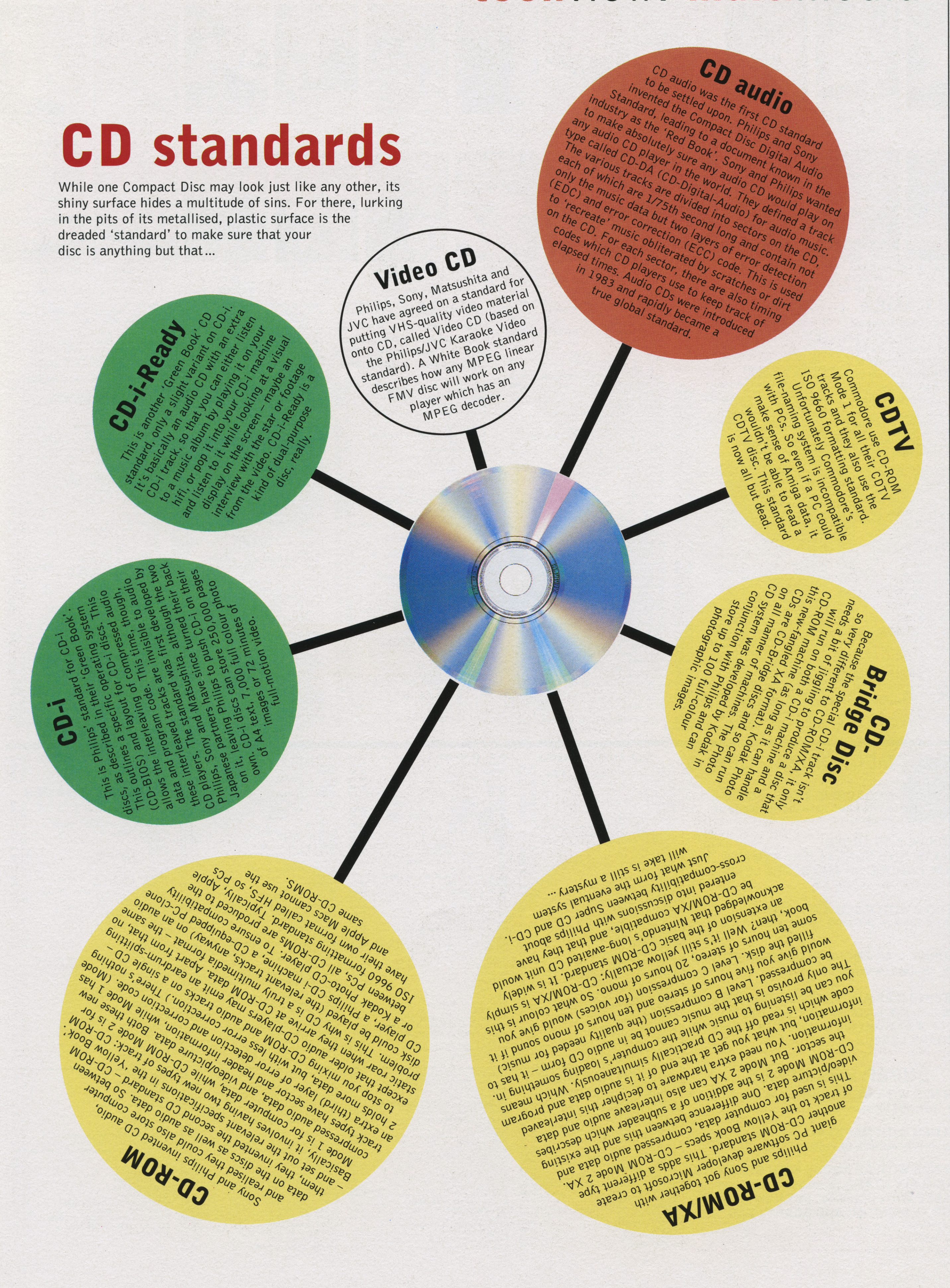
Affordable read/write drives may arrive, but the manufacture of CDs is a very final physical process. It's more likely that advances will be made in hybrid magneto-optical drives. But CD's speed problem might not be so easy. Double-speed CD drives already exist, and quadruple-speed models are under development. But even a quadruple-speed drive will have a seek time of a quarter of a second or more. While magneto-optical drives may replace conventional hard drives, they won't be any better – just bigger. But because you can carry magneto-optical discs around, floppies will be dead.

Does CD-ROM also spell the death of the video? It could happen. Deals are being struck, technology is being developed, compression techniques being perfected... you still won't be able to squeeze a whole film on a single CD, but swapping discs half way through a film is no great hardship. And the potential is terrific. A cheap, robust, portable medium that can also handle hifi audio, text, diagrams, and stills. All interactive. All accessed in an instant. In five years your VCR could be in the bin.

But is CD-ROM also going to mean the death of decent games? It's a potentially great format, but it has serious limitations. For games to get better we need both more storage and more power. CD-ROM gives us the storage – but to create games of the standard we're used to, we need the hardware to match: lots more power, much more RAM, faster processors, and much better graphics chips. Computer entertainment relies on machines that can handle data, not just play it. E

CD standards

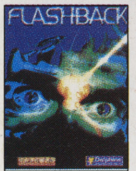
While one Compact Disc may look just like any other, its shiny surface hides a multitude of sins. For there, lurking in the pits of its metallised, plastic surface is the dreaded 'standard' to make sure that your disc is anything but that...

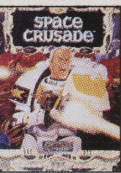


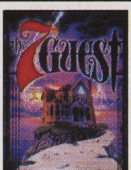
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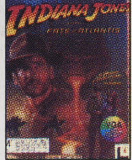

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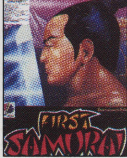

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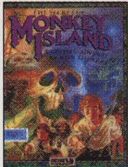

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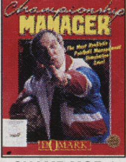

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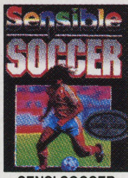

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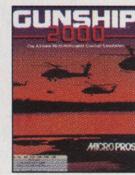

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PC GAMES

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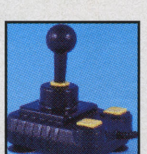



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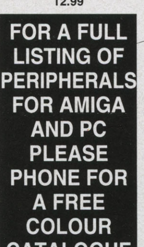
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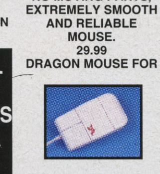


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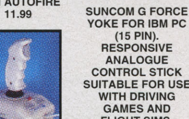
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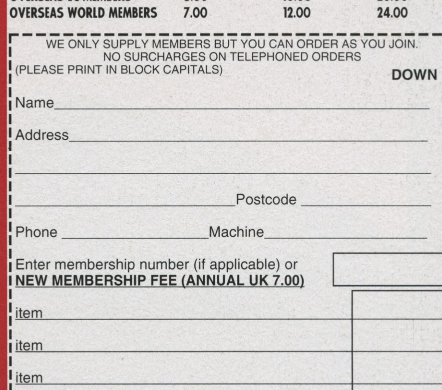
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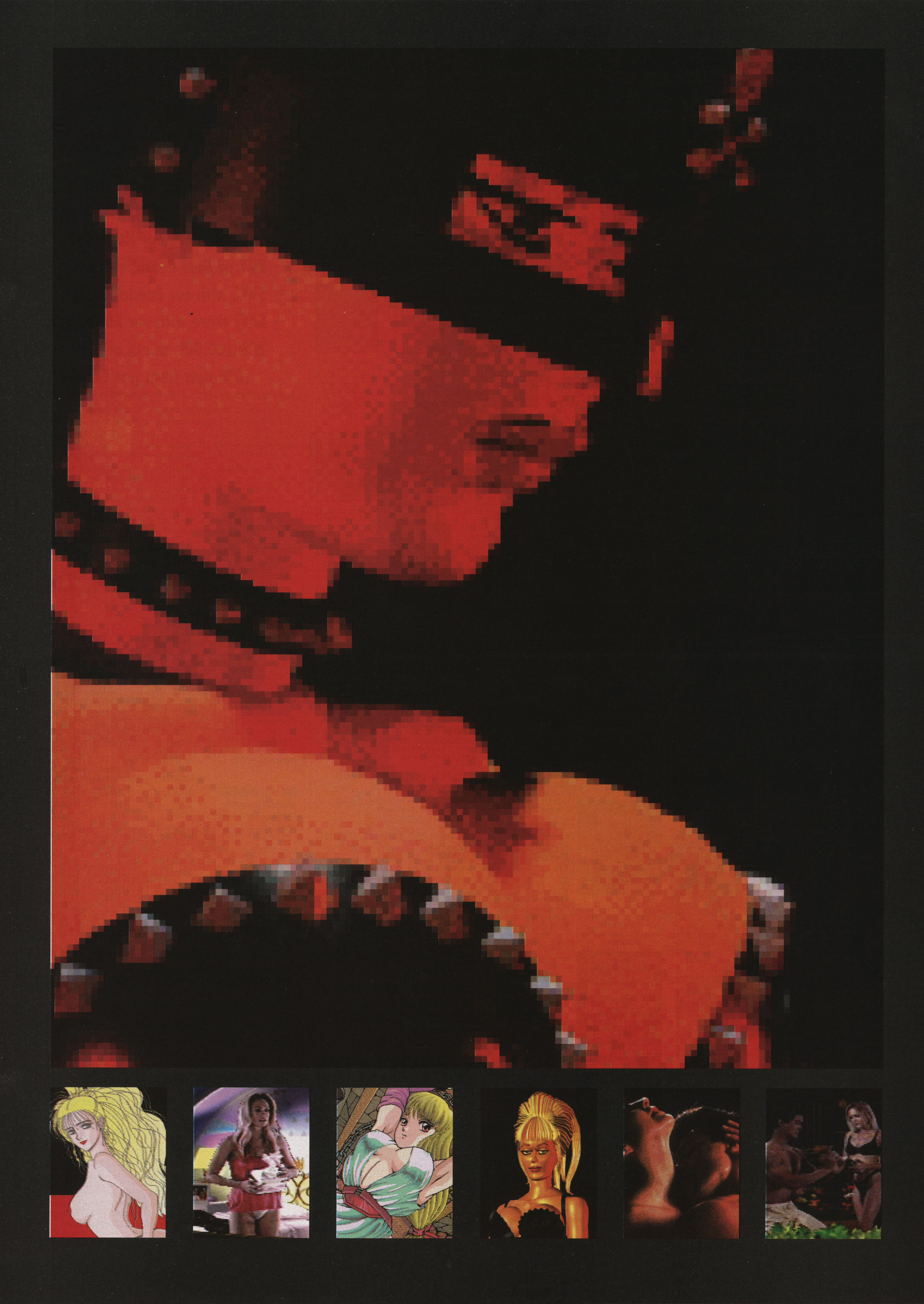


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Sex and violence

Some of the latest CD-ROM titles are being hailed as part of a new era of 'adult' software. But is this really leading edge adult interactive gaming – or just the same old sexist twaddle? **Edge** investigates

Don't believe the hype: Sega's *Night Trap* has not made history. Far from being the first videogame to get a cinema-style 15 certificate it is, in fact, six years too late. That dubious honour belongs to a Commodore 64 game called *Dracula* from CRL, released way back in 1987. *Dracula* was swiftly followed by another violent CRL C64 videogame, *Wolfman*, that went one step further and picked up an 18 certificate.

With crudely digitised pictures of severed heads and other Wolfish gore, *Wolfman* was deemed unsuitable for its intended audience. The immediate response from the computer press was that CRL had themselves prompted the certification, in order to increase interest in what was an otherwise mundane graphic adventure.

History would appear to be repeating itself – the only difference this time is that there's moving images rather than just digitised stills. And apparently Sega didn't prompt the certificate for *Night Trap* – the British Board of Film Classification (BBFC) decided singlehandedly that no-one under 15 could play it; 'The main issue was that it featured violence to a woman', says BBFC deputy director **Margaret Ford**.

'It is pretty unpleasant – a scantily clad woman being stalked and attacked. It's the age old cliché, vulnerable woman, dominant man. Even if they were supposed to be aliens they looked like men in binliners with a severe spinal problem.'

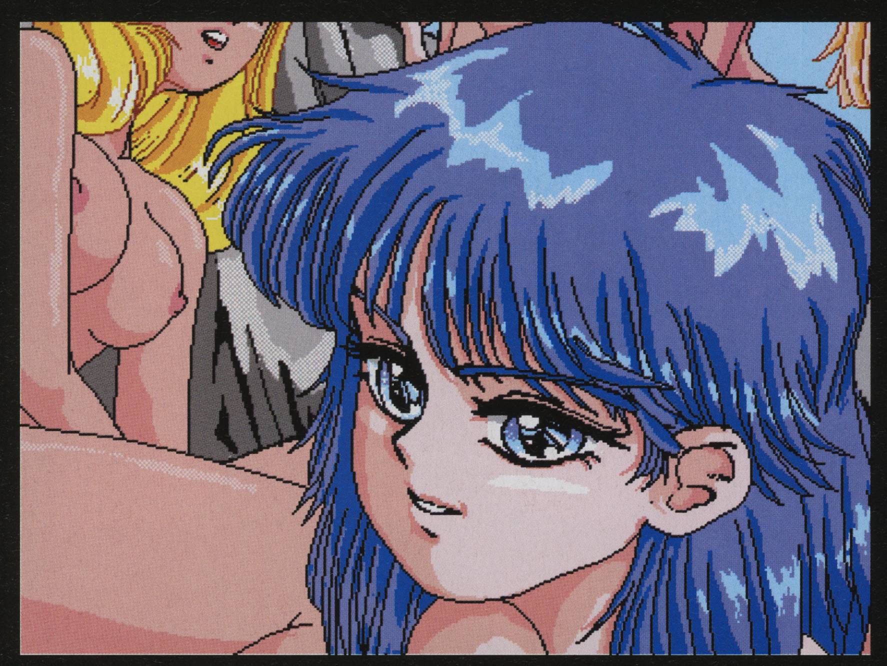
Sega claims that the 15 certificate was its 'worst case scenario', but in the

'The industry not only needs to act responsibly – it needs to be seen to be acting responsibly'

Nick Alexander, MD Sega Europe

Continued next page

featureview: sex&violence



Anime-style naked girls fill *Cobra Mission* – an action RPG from US software house Megatech. The game, released last year, was voluntarily rated 18. According to Megatech, it consists of 'danger, Intrigue and seduction'



Continued

aftermath the firm's European managing director **Nick Alexander** was in a philosophical mood. He claims that the involvement of institutions like the BBFC shows that the industry is about to enter the 'mainstream' home entertainment business and take its place alongside cinema and video.

'We're on the threshold of popular acceptance', he says. 'People are realising this isn't a fad. It isn't something for spotty kids locked away in their bedrooms. Interactive entertainment is appealing to adults as well as children and teenagers, and it's here to stay.'

Indeed, ten years ago the video film industry was in a similar position to the games industry today. It had enjoyed four years of enormous growth, and it had made a lot of people a lot of money. But by many – especially the media – it was viewed with suspicion. It was a seedy world of porno flicks and video nasties like Driller Killer.

All it took was for a couple of murderers to be caught with a VCR in their living rooms and before you could say 'sensationalist reporting', a media campaign was born that tarred the industry, and led to the 1984 Video Recordings Act. It's this same Act that also requires videogames depicting certain scenes (see below) to have a BBFC rating.

People in the games world see history repeating itself if steps aren't taken soon. 'I think this is a key moment. The industry not only needs to act responsibly – it needs to be seen to be acting responsibly', says Sega's Nick Alexander.

But just where are the videogame equivalents of Zombie Flesh Eaters or Lesbian Lavatory Lust? The answer is that they are on their way… Basic digitised porno disks for the Amiga and Atari ST have been circulating in school playgrounds (among other places) for some time. These tended to involve naked women being subjected to an aerial assault by a detached male organ – under the erratic control of the mouse or function keys.

Things have moved on since then. In the States the arrival of multimedia personal computers with CD drives and full-motion video has opened the doors to a new era of interactive pornography. RPGs and beat 'em ups like *Metal and Lace: Battle Of The Robobabes*, *Cobra Mission*, and *Dragon Knight III* are typical of this new strain of software. Perhaps the most famous of this new software progeny is *Virtual Valerie*, produced by the Chicago-based software house Reactor.

In this roleplaying game the player is invited up to the apartment of a pneumatic blonde. Reactor's special projects manager **Norm Dwyer** explains the rest. 'Valerie is certainly ripe and willing but most of the game is spent exploring her apartment', says Norm. 'You can look in her kitchen, check out what's in the fridge even. Then – if you make it that far – it closes with you taking her clothes off, and she invites you into the bedroom for a little sexual interlude.'

This may all sound like good clean fun, but Norm explains, 'You could describe it as hardcore – there is penetration.'

But it's not as if the player actually drops his trousers is it? The interactive experience is simply a 2D animated end-of-game sequence – or perhaps more aptly, climax. This has led some to argue that adult games of this nature are more a novelty than a genuine untapped market.

'I can't see what a CD product in that genre is going to give you that accelerates the experience of a porn video – or even a porn mag', says Virgin Games managing director **Tim Chaney**. 'What the multimedia interactive consumer is going to want is lots of interactivity. Lots of digitised Stallone and Schwarzenegger. He wants to control them, and he wants a soundtrack by Guns 'n' Roses playing while he does it. He might buy a £9.99 Playboy disc as a bit of light relief, but that's all.'

For the record, the Apple CD-ROM version of *Virtual Valerie* has sold over 10,000 copies in the US at $95 (£55) apiece. That's a healthy, if not mindblowing, performance. 'It is a longterm market,' insists Norm Dwyer. 'It's not just a novelty

– pornography and erotica have never been that. It will continue to grow in this sector although it won't become dominant.'

The question is whether purely adult titles like *Virtual Valerie*, *Donna Matrix*, and *Seymour Butts* (to name just a few) will cross over from PC systems to the home entertainment platforms: Sega, Nintendo, CD-i, 3DO et al? And, more importantly, is this a good or a bad thing?

Philips' CD-i format is due to be graced with no less than three sexually-orientated discs this autumn. First there is *Voyeur*. Billed as the world's first interactive movie, this features plenty of sexual shenanigans in the context of a whodunit-type roleplaying game. For instance, in one scene a woman vamps it up in her underwear, complete with studded dogcollar and leather whip. No intercourse is actually shown, and Philips itself describes the game as 'more of a raunchy soap opera with tongue firmly in cheek'.

There is also a brace of 'educational' titles: the interactive version of *The Joy Of Sex*, and the self-explanatory *Playboy Art Of Sensual Massage*. Both titles feature full-motion video, which means that a BBFC 18 certificate is almost a certainty. But **Julian Lynn-Evans**, managing director of Philips Interactive Media, is adamant that he isn't using smut to boost sales.

'We're not in the market for under-the-counter porn,' he points out. 'People who buy *Joy Of Sex* for that will be disappointed. It's frank, not titillating. It doesn't show full-motion shots of genitals. You get drawings instead. We don't want to be accused of sexploitation.'

Like many people in the industry he expects the adult software revolution to be led by the new CD-based systems rather than the older cartridge-based Sega and Nintendo platforms. 'The consoles sold initially through toyshops and that's what they're still seen as – toys', he claims. 'What I suppose the CD-i, 3DO and CD-ROMs are going for is an adult audience, using the word in its widest sense. And you can't treat adults like children and give them what they want.'

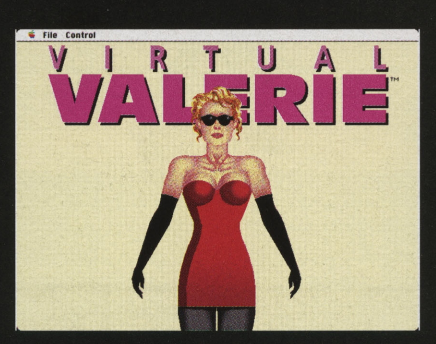
His analysis is backed up by Reactor's Norm Dwyer, but for different reasons. Dwyer says it is less down to different target audiences more to the fact that Sega and Nintendo rigidly control the software that is put out for their consoles. In contrast, CD-i and 3DO are 'open' – anyone can produce anything for them.

'Sega caught a lot of flak for *Night Trap* and that only featured scantily clad women, they weren't nude or having sex or anything,' says Dwyer. 'People perceive them [Sega and Nintendo] as children's games. That's not the case with, say, 3DO. People have asked Trip Hawkins [former boss of Electronic Arts who now runs the 3DO show] if he thinks porn will come out on 3DO and he just shrugs his shoulders and says: 'we have no controls over content'' According to Dwyer, Reactor is already thinking about porting *Virtual Valerie* to 3DO this autumn.

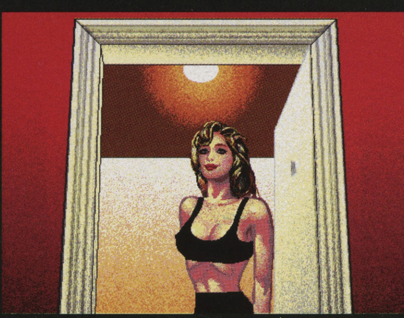
Most people that **Edge** contacted in the games industry feel the arrival of adult-oriented software is a good thing.

Asked whether Sega would approve a videogame for over-18s only, Nick Alexander replies: 'It's not an issue that's been raised yet, but I think that the logical

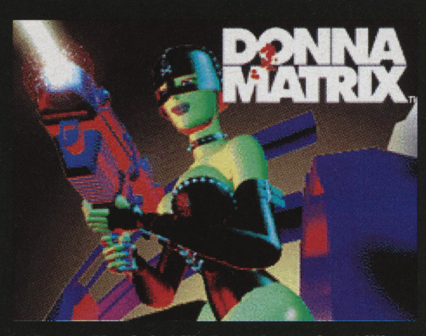
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***Virtual Valerie*, for the Apple CD-ROM, is the creation of US software house, Reactor. 10,000 copies have been sold in the US**



Valerie is out in two versions, *Virtual Valerie 2* and *Virtual Valerie, the Director's Cut.* Both feature animated graphic sex scenes



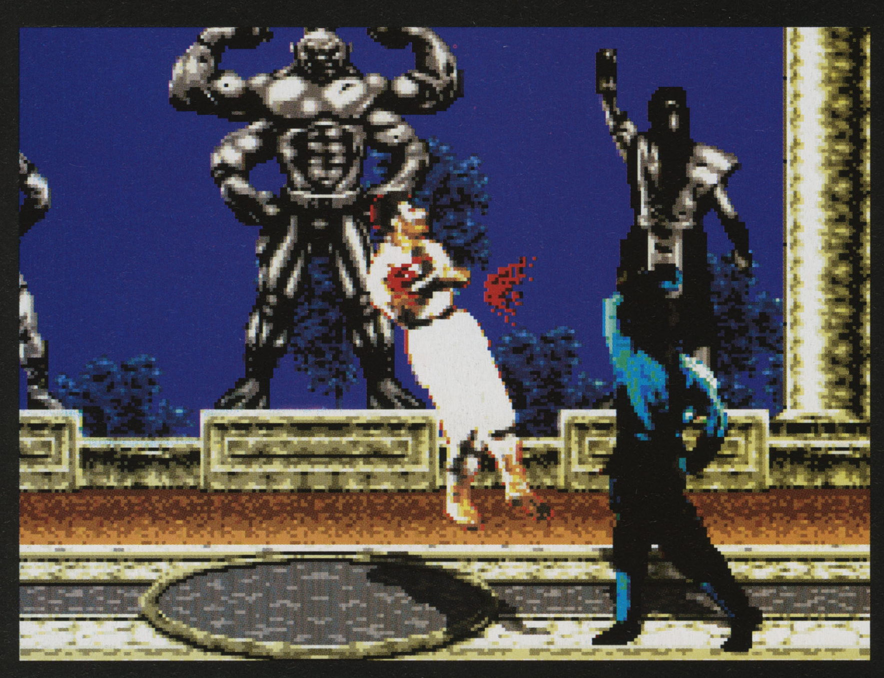
***Donna Matrix* is billed as 'the perfect killing machine' – she's a pleasure droid who gets reprogrammed (badly) by a sadomasochist**

'Sega got a lot of flak for *Night Trap* and its scantily clad women – but they weren't nude or having sex or anything'

Norm Dwyer, Reactor Software



featureview: sex&violence



Mortal Kombat **for the Mega Drive keeps most of the original blood and gore from the coin-op. Even the special 'death moves', like the head-tearing-off and heart-ripping-out bits. The Nintendo version is much safer**

Continued



The original cover artwork for Sega's *Night Trap*. The digitised figures in the game itself don't come anywhere near the clear, air-brushed quality of this image, but still the game was given a 15 certificate

position would be that if it falls happily within the law, and it was rated an 18 by the BBFC, then it's hard to see that anyone would be doing anything wrong by making or selling that program. 'You may not approve of Electric Blue,' he adds, 'but it is a legal product to sell.'

There are worries about the under the counter stuff though. 'There is concern among our members that this could get out of hand,' says **Roger Bennett**, director general of the European Leisure Software Publishers' Association (ELSPA).

'While adult product will be on the market legitimately, the same way it is in the video industry, stuff like bestiality and sodomy is a different matter. And it will inevitably appear in the UK – just as hardcore video and magazines are smuggled in.'

To distinguish the responsible publishers from the muck merchants, ELSPA is introducing a code of practice like the one the video industry brought in after the 'video nasties' saga. This means that the content, packaging and advertising of computer and videogames will be vetted by a special committee and – if satisfactory – given an official seal of approval. Those that are borderline would then be referred on to the BBFC for an official rating.

This scheme, if truth be told, is more likely to be tested on a daytoday basis by games pushing the boat out in terms of violence rather than sex. 'We're working on horror product, nothing sexual at all,' says Virgin's Tim Chaney, 'we're doing Terminator on the Mega CD, for instance, and while there is violence, it is in the abstract – robots, spaceships, whatever. By the same token, we wouldn't do Reservoir Dogs, but we would do Alien 3.'

'We're not going to get Driller Killer on CD because I don't think the retailers would stand for it – certainly not the mass retailers. They went through that with the video industry and we're all a lot more mature now.'

While a two-player beat 'em up based on Driller Killer may be a long way off, there is a certain title from Accolade – *Mortal Kombat* – that is being hyped as its pixellated equivalent. This game, based on the Williams coin-op, has crystallised some opposing views within the industry about the effects of more explicit software.

Mortal Kombat (reviewed in **Edge** one) is being pitched by Accolade as '*Streetfighter II* with added gore'. This comes in the bloody shape of several death scenes where the victorious fighter rips off the head or tears out the heart of his adversary with a 'unique special move'.

These special moves will only be available to Sega players – Nintendo has banned them. The company's US marketing chief **Peter Main** has used this as an example of the different standards applied by Sega and Nintendo.

'Sega appears to have invented its new rating system in response to the growing worldwide outrage over *Night Trap* – a game that would never be allowed to

The 1984 Video Recordings Act

Exempted Works

'As specified in section 2(1) of the Act, a video work is an exempted work if, as taken as a whole –
(a) it is designed to inform, educate or instruct; or
(b) it is concerned with sport, religion or music; or
(c) it is a videogame.

This exempted status is forfeited under section 2 (2), however, if the video work to a significant extent depicts:
(a) human sexual activity or acts of force or narrative associated with such activity.
(b) mutilation or torture of, or other acts of gross violence towards, humans or animals.
(c) human genital organs or human urinary or excretory functions.
Or if it is designed to stimulate or encourage anything within paragraph (a) to a significant extent or within paragraph (b) to any extent.

The decision about whether or not a video work is an exempted work rests with the supplier, and neither the BBFC nor the Home Office has the power to rule authoritatively on this question, which is ultimately a matter for the courts...'

appear on any Nintendo format because of the strict gameplay standards that we put in place in 1988', he says.

Those rigidly enforced standards have been a perpetual headache for programmers. 'It's arcane stuff,' says one Nintendo coder who asked not to be named. 'Blood is never red it's blue, 'dead' bodies have to evaporate. There's a whole truckload of things that are verboten.'

But Nintendo, citing its own research which indicates that 70% of all videogames are bought by children under the age of 15, insists the censorship is necessary. 'Our highest priority is to produce games that are both exciting to younger players and acceptable to the whole family' says Main.

It's not just *Mortal Kombat* that has been filleted by the moral guardians at Nintendo – remember the torture scene at the start of *Desert Strike* on the SNES, or Ken's smashed teeth in *Streetfighter II*, or the blood on the ice in *NHLPA Hockey*? No? That's because Nintendo decided such interludes were 'unfit' for its customers.

For Nick Alexander at Sega that approach is rooted in the industry's past – not its future. 'They've derided the classification system because they say they would never allow a game that required classification to be produced in the first place. But Nintendo are boxing themselves into a very tight corner if every game they produce has to be suitable for a three year old. Particularly as the fastest growing part of the market is adults over 18.'

And that is the crucial point. Grownup players who are entering the market in droves will simply vote with their feet if Nintendo, or any other company, does not allow the release of software that appeals to them. 'I'm afraid that Nintendo can't stick its finger in the dam forever – these changes are inevitable,' admits ELSPA's Roger Bennett.

In technological terms, videogames have now caught up and surpassed the VCR or laser disc player. So why should software for one type of product be viewed as a class apart?

'One of the things to bear in mind is that multimedia players are going to be able to do a lot of new things as well as old ones,' says **Mark Lewis**, European president of Electronic Arts. 'And the act of viewing or reading something controversial in terms of violence or sexual explicitness is more a judgment for the purchaser than the provider. So whether we're talking about a handbook on sex, or a videotape or CD on sexual techniques, or a plastic doll, the real issues are more concerned with society and morality than with multimedia.'

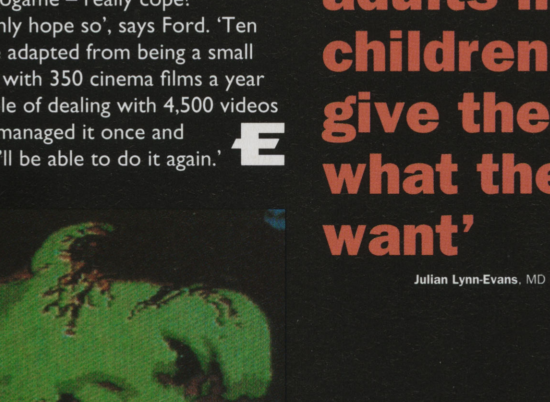
Meanwhile back at Soho Square, one of the chief arbiters of morality within society – the BBFC – is gearing itself for a new lease of life as an arbiter of what can and cannot be shown on our consoles. 'We really are rather excited here – it's a whole new ballgame for us,' says deputy director Margaret Ford. But can the BBFC's fulltime staff of 12 people – few of whom have ever played a videogame – really cope?

'I certainly hope so', says Ford. 'Ten years ago we adapted from being a small team dealing with 350 cinema films a year to one capable of dealing with 4,500 videos as well. We managed it once and hopefully we'll be able to do it again.' E

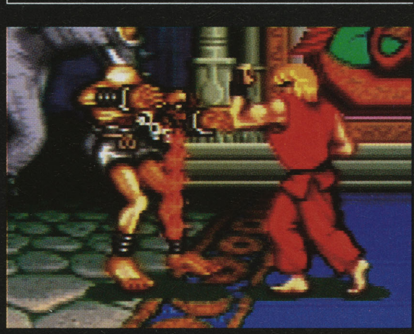
'Consoles are still seen as toys – and you can't treat adults like children and give them what they want'

Julian Lynn-Evans, MD Philips Interactive Media

Continued next page



The gory severed head bit from CRL's C64 classic, *Wolfman*. Stills like this made sure this game was given an 18 certificate



Dhalsim takes a pummelling from Ken in the Japanese Super Famicom version of *Street Fighter*. Note the pink-tinted blood spray



***Waxworks*, a PC game from Accolade, promises 'extreme graphic violence'. Your character's head drops off when he dies**



An interview with Mark Lewis of EA



'All in all, artists have a choice to give a very interpretive or a very realistic representation of their subject matter. ...and I think censorship has no real part in that process.' Mark Lewis, European boss of Electronic Arts

Continued

Mark Lewis, the European president of the software giant Electronic Arts, will be one of the key men behind next year's European launch of 3DO – a system hailed as the ultimate interactive multimedia machine.

Edge tracked him down to find his views on 'adult' software, among other things...

Edge Is adult software simply a novelty or do you think it's here to stay?

ML 'Magazines and video are forms of media that by their very nature are linear and not very interactive. You can read a magazine from back to front or watch a video in reverse, but this is not the intended design use. They are sequential forms of entertainment or learning. But microprocessors or fuzzy logic offer the potential for a person to explore a nonlinear experience.

'When I sit down to watch a James Bond movie I am settling in for a linear experience. As the viewer I get to watch James Bond climb into his Aston Martin and set off on a predetermined course with a predetermined storyline. With the help of microprocessors I can click on the Aston Martin and find out about the car, the history of the company, the history of the automobile industry, etc. In fact in more advanced systems, the player will be able to alter the route and alter the outcome of the storyline.'

Edge Can computers really add anything that magazines or videos can't supply?

ML 'The human mind receives information from a variety of inputs. Some of these are sensory, some are pure data and some are mere fabrics of associations called up by combinations of memory. Magazines, newspapers and videos can stimulate a response but the reality is that so-called multimedia machines have the ability to bombard us with more sensory and digital information, and so those memory cells are able to get better 'tickles' and accordingly evoke more complex patterns of association so that disbelief is suspended.'

Edge Are we talking real interactivity? Acting out our fantasies?

ML 'Interactivity has become a buzzword. In our very nature we are interactive mammals. We learn by doing. In the technology revolution, sensory and data input from digital technologies will become more pervasive in our culture – just as remote controls allowed industry to develop robotics, so too will multimedia allow individuals to make their homes virtual universities. The real question is whether traditional forms of media, such as magazines and television, are going to be viewed as the novelty – a blip in the history of communication.

'Acting out fantasies, or using simulators, is an important part of the learning process. Not everyone can afford a dedicated flight simulator of military specifications, but everyone can try their hand at *Strike Commander* and learn about the dynamics of flight. As chipsets become more complex and less costly, the suspension of disbelief will become greater and the learning experience will become closer to embracing 'the real thing''

Edge If it is here to stay, would responsible publishers like Electronic Arts contemplate producing more adult titles? By which I mean the multimedia equivalent of Basic Instinct, or even Ai No Corrida, but not Lesbian Lavatory Lust?

ML 'Being unfamiliar with the films cited (really Mark, haven't you seen Lesbian Lavatory Lust yet?) I will make the assumption that the first two contain adult entertainment and some other values and that Lesbian Lavatory Lust has only adult content and no redeeming value. We develop software for a wide variety of different target audiences and we would have to consider whether or not an interactive audience would find interest in a more 'realistic' content. However it is clear to me both personally and professionally that we would never produce a piece of software that could be called sexploitative or denigrating to anyone.'

Edge On a related issue, if sex is not a key component of the new multimedia era, what about violence? Console games like *Mortal Kombat* show what could be achieved on existing platforms – how much further could it go on 3DO et al?

ML 'There has been a lot of dialogue in Hollywood as well as amongst specific studios about the levels of violence in entertainment and the impact on society in general. Clearly Saturday morning cartoons have to be some of the most violent, explosive and explicit examples of ways to destroy 'toon' life. In my own lifetime I have seen Wily E Coyote killed more times than there were troops killed in Vietnam. I don't mean to trivialise death in combat but to me the question of 'does art imitate life or life imitate art' remains unanswered.

'3DO is like having a TV studio in your own home. You can use it for a variety of reasons, and it will be up to publishers to strive for the creation of new media titles that will become classics of the magnitude of Ben Hur, Dr Zhivago and Les Miserables, all of which feature reasonably brutal violence, but in the context of a far greater tableau of imagery. All in all, artists have a choice to give a very interpretive, or very realistic representation of their subject matter. In fact I think that good directors like Martin Scorsese are known for their ability to translate what they see in their minds to what we see as their creation onscreen, and I think that censorship has no real part in that process.'

Edge Is it inevitable that multimedia titles will have to carry a BBFC rating? Is this a good thing?

ML 'It's inevitable that there will be some type of rating system for multimedia titles other than good, bad or indifferent. I foresee that there will be an attempt to give some guidance to the consumer as to what the title may be appropriate for. How this is going to work in the 99.9% of the world that is not regulated by the BBFC still has to be determined.

'Furthermore, I do not personally think that the BBFC is equipped to understand how different the procedure would have to be for rating non-linear interactives. It is no longer a matter of sitting down and working on a 90 minute movie and then determining the certificate. Instead it would be a case of someone having to be prepared to spend an excess of 200 hours exploring a multimedia title, and still never be certain that they have seen everything that the source code is capable of doing.'

Edge Last, and by every means least, will digital or virtual sex ever beat the real thing? How far are we away from the Orgasmatron?

ML 'You're only as far away from the Orgasmatron as you feel.'



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Network television

Imagine becoming part of a national games and media communications network just by switching on your TV. Sounds unlikely? It's already happening. **Edge** makes contact

techview: connectivity



The dream of a network of games and entertainment services is nothing new. But in the next twelve months you'll see that dream start to become reality. Further in the future there's even the possibility of direct broadcast games, where new parts of a videogame are continually downloaded from satellite or cable while you're playing, and where you interact with other players on a national, or international network.

Both Sega and The 3DO Company are planning to get a network for their machines up and running in 1994, and the Sega Channel has just started limited broadcasting via cable in the US.

Another games network, called St Giga, is also planned by Nintendo out in Japan. The service, which will be online in April 1994, will be called simply the 'Message Information Broadcast Service System' and will give users access to an information and music channel. There will also be a 'Game Battle Service' where users can play tournaments via satellite with other Super Famicom owners. The first tournaments planned for St Giga are *Super Mario Kart*, *Dragon Quest* and *Final Fantasy*.

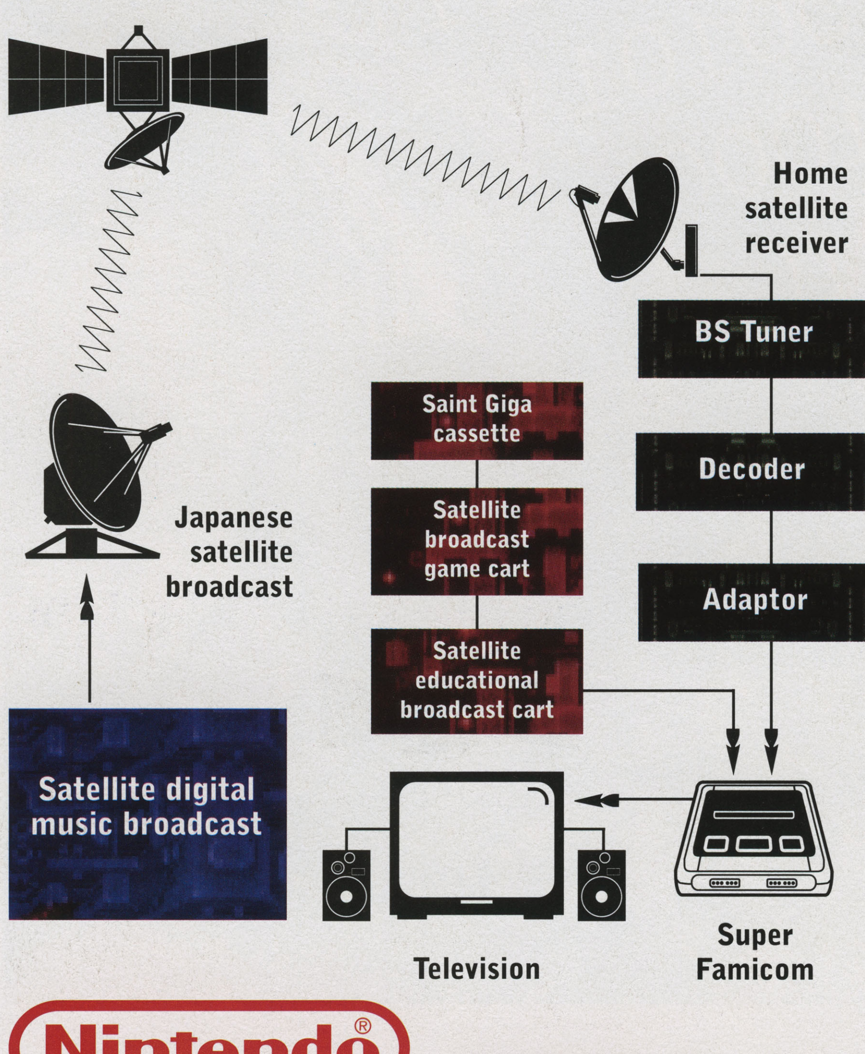
But significantly, Nintendo's original plans for supplying new videogames via satellite have been scrapped, apparently due to technical and legal constraints.

But another Famicom-based system has been in limited use in Japan since 1989, offering electronic banking, share trading, teleshopping, airline reservations, postal services, a fitness routine and even horserace betting. As Nintendo's US

Continued next page

techview: connectivity

The Nintendo St Giga network



Nintendo®

The Nintendo system needs a specially developed St Giga decoder and adaptor and an RS tuner. Using a special St Giga cart, and an adaptor which slots into the Super Famicom, you log onto the service to receive information and play in games tournaments



spokesman **Don Varyu** says, 'There are more than 112 million Nintendo game machines worldwide, and less than a third of those are Game Boys. There's about 80 million machines capable of porting to a network.'

But the competition for the interactive home entertainment market is steadily hotting up. While Nintendo's plans for world domination, and particularly for a US network, have so far failed to materialise, Sega is already delivering games to the home through cable TV. It's still on a small scale, but Sega has big plans for the system.

The Sega Channel is the product of an alliance with Telecommunications Inc (TCI) and Time Warner, and it's currently being testmarketed in 350,000 households across 13 US cities. Sega plans to go nationwide early next year. If it's successful, it's certain to quickly make its way over to the UK.

But Sega is already facing its biggest potential rival – the 3DO machine, with which **Trip Hawkins** plans to create a new standard for home multimedia systems. And 3DO has the backing of, among others, the US telecommunications giant AT&T. Hawkins' plan is to link a grid of 3DO machines over the AT&T network as a way of delivering games directly into the home. He's also signed up Time Warner, the second largest cable operator in the US – and also the same company backing the Sega Channel.

It's hard to say at this stage which system will take off and become the home multimedia standard – 3DO are keen to point out how their tie-in with AT&T gives them access to industry standards for video compression and signal processing, but then, Sega's system is already rolling. The basic 3DO machine is due in the US in October, and a network version is promised for 1994. The UK launch of the basic system will be next Spring.

According to Sega UK's **Andrew Wright**, subscribers to the Sega Channel will just preview the selection of games available, and then download the one they want to play directly into their Mega Drive.

The cost of subscribing to the channel will be around £6-£10 a month. Subscribers will also have to pay for a special lead that plugs into the Mega Drive cartridge slot and links it to the cable TV receiver, costing around £35.

Initially subscribers will be offered a choice of 20 games which will be rotated every month. Just like in TV movie channels, there will be a multiple selection of games rather than a whole library of titles available all the time. Subscribers will simply use their controllers to pick a game from the menu and then hit the 'Send' icon. But unlike cartridges you won't be up and playing instantly: the downloading process will take a couple of minutes.

The Sega channel will also offer demo levels from unreleased games so you can get a flavour of them before they hit the shops, and teletext-style pages offering news, tips and letters.

The UK cable TV companies are itching to get their hands on the Sega Channel. but Sega itself is not so sure. Compared with the US, where almost 80% of households have access to cable TV, the

Continued

UK cable industry is tiny. Only 454,000 homes in the UK watch cable TV, out of a total of 2.2m households that have been passed by the cable TV lines.

'That is a very small proportion,' says Sega's European managing director **Nick Alexander**. 'It makes us wonder whether it's viable for a massmarket company like Sega to use cable.'

But given that Sega is committed to a European launch for the Sega Channel if it succeeds in the States, what other options are there? The Nintendo route – via satellite – is the next obvious course. A deal putting Sega TV onto Sky's Astra satellite could give it access to 100m homes across Europe in one stroke. But, as Nintendo has discovered, there are big disadvantages with satellite technology.

'We've looked at this and it seems that the time it takes to download games off air is a major problem,' says Alexander. Apparently it takes about about half an hour, and the more exposed nature of satellite broadcasting – a bird landing on your Sky dish could corrupt a download for instance – also creates problems.

Another option for linking up the network is via the phonelines. People have been using these lines for years to get access to news and entertainment services via modems. But there's more to it than that – Sega users in the US can now buy modems that allow them to play games against their friends over the phone.

Baton's Teleplay system is already on sale and comes with *Terran Wars* – an Asteroids-style shoot 'em up. The unit will be sold in the UK later this year.

There's also a similar addon called Edge – the result of an agreement between Sega and AT&T. Made up of a modem and a speaker phone, Edge allows competitive play and also lets you talk while you play. It'll be available in the US next summer and will cost between $100 and $150. UK launch is likely soon after.

But for gamers in the UK, an important breakthrough was recently announced by BT – the biggest UK phone company – when it gave details of its so-called Project ICE, which could give videogame firms access to 26m households in the UK over the phonelines. ICE stands for Information Communications and Entertainment, and is basically BT's response to the growing threat of cable TV. It offers film, home shopping and games as well as basic telephone services.

Both Sega and Nintendo have apparently had talks with BT, but there are still problems that must be solved before ICE goes live – the most glaring of which is that the law as it stands forbids BT from broadcasting any entertainment services over its phonelines. BT admits this is 'a grey area' but it insists that the one-to-one nature of ICE – ie you individually select the game or video – means that it is not 'broadcasting'. The cable TV companies, who have a lot to lose, are adamant that it is, and are calling on BT's regulatory watchdog to ban the project.

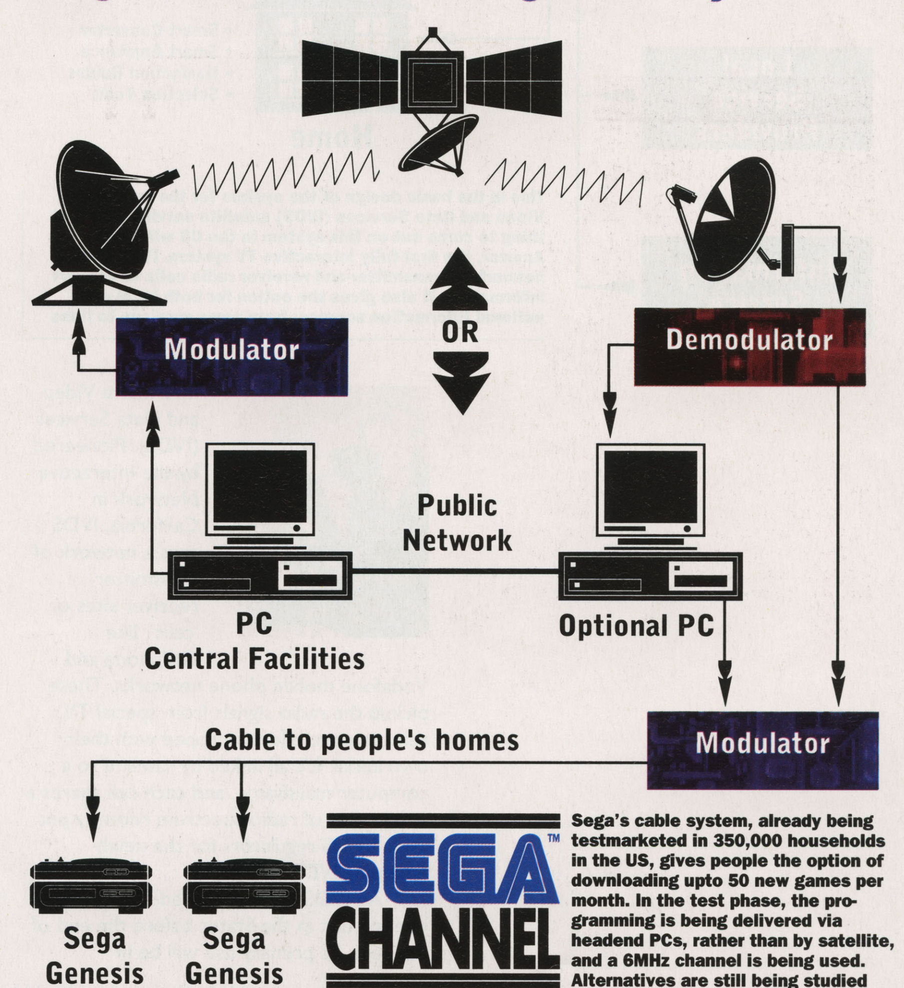
The dispute should be sorted out by the end of the year, but one thing is certain: in 1994 some of us will be feeding our 3DO, Mega Drive and SNES systems with broadcast signals rather than carts. *Sonic* and *Mario* with ICE, anyone?

The problems of playing games through a domestic phone are obvious enough – nobody else in the house can make or receive phone calls while you're connected. Enter a technology called

'There's about 80 million Nintendo machines worldwide capable of porting to a network'

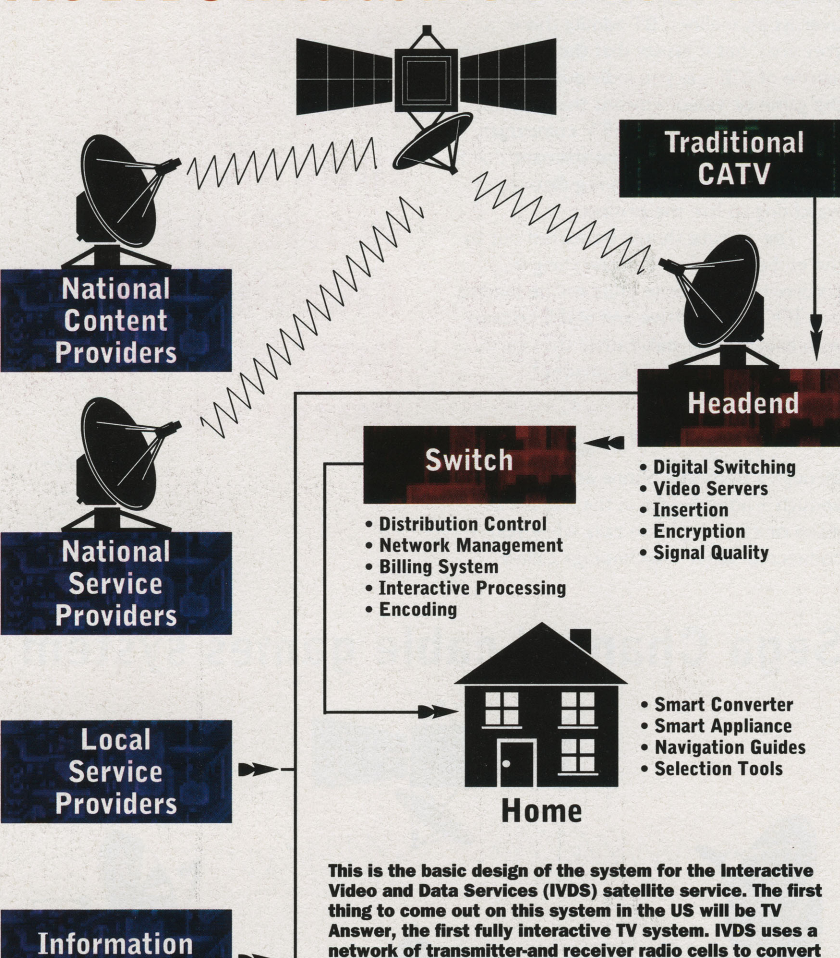
Don Varyu, Nintendo US

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Sega's cable system, already being testmarketed in 350,000 households in the US, gives people the option of downloading upto 50 new games per month. In the test phase, the programming is being delivered via headend PCs, rather than by satellite, and a 6MHz channel is being used. Alternatives are still being studied

The IVDS interactive TV network



This is the basic design of the system for the Interactive Video and Data Services (IVDS) satellite service. The first thing to come out on this system in the US will be TV Answer, the first fully interactive TV system. IVDS uses a network of transmitter-and receiver radio cells to convert information. It also gives the option for both local and national information sources; from news services to films

Interactive Video and Data Services (IVDS). Pioneered by the Interactive Network in California, IVDS uses a network of transmitter-receiver sites or 'cells', like Cellphone and Vodafone mobile phone networks. These pickup the radio signals from special TV remote controllers equipped with their own aerial. It's all linked by satellite to a computer mainframe, and each cell shares a 1MHz slice of radio spectrum recently put aside by US regulators for the newly emerging IVDS industry.

An IVDS network called TV Answer is due to start in the States before the end of the year. Its primary use will be in interactive television, but interactive videogaming will be the next development. When TV Answer starts, viewers will be able to respond to TV game shows, shop, bank or explore other services using a $700 home transmitter/receiver or 'Personal TV Unit' about the size of a VCR, made by computer giant Hewlett-Packard. Each subscriber will be given a unique PIN number, and fixed information such as address, phone number and credit card number will be stored in the system.

But there is an even simpler way of making TV feel interactive, even if in the strict sense of the word it isn't. Known as 'video-on-demand', it works by broadcasting so many channels that the same information can be repeated at regular intervals. So if you select a game from a menu, for instance, your computer might tell you that it will download in 20 minutes, and how much it will cost.

Another possibility with this type of interactive TV is for a movie to be customised according to what you say you want to happen, a feature promised for future movie disks on the CD-i system. Instead of switching tracks, the computer would weave this apparent magic simply by switching between parallel stories broadcast at the same time.

This is the secret of so much of this interactivity, whether for TV, movies or videogames, is that it relies on having a large number of simultaneous channels. When you have hundreds of channels, almost anything is possible. But creating so many channels depends upon the next big thing in TV – digital broadcasting. Unlike today's analogue broadcasts, digital programmes can be compressed. This currently allows up to ten channels of TV to be broadcast in the space normally occupied by one – and this figure seems likely to increase.

It's all thanks to MPEG2, the broadcast version of the digital compression technique that allows full-motion video to be played back from CD-i disks, and from the impending 3DO games system. MPEG stands for the international technical think-tank 'Motion Picture Experts Group' (pronounced 'em-peg').

The first public digitally-compressed TV system will be launched by Hughes Communications in the US. Called DirecTv, it promises to deliver some 150 channels of TV from just two high-power Hughes HS-601 satellites, reaching the home via 18-inch dishes and $700 receivers. The first satellite is due to be launched from French Guyana on an Ariane rocket in December. DirecTv will initially

Continued

repeat pay-per-view movies every 30 minutes, so that subscribers can choose their own start time.

The broadcast division of Sony will supply all the digital tape playback equipment for the DirecTv system, based at its massive 50,000 sq ft broadcasting centre currently under construction at Castle Rock, Colorado. Capacity on this scale is confidently expected to nurture a flurry of US games channels, allowing gamesters to buy and upgrade games via DirecTv, without having to queue at a checkout till ever again.

So that's the way it's going to go. Interactive TV will spawn a million interactive shopping, movie watching and gaming experiences, and it's all just round the corner. The only question left to be answered is which interactive TV system will become the standard for the future.

A good clue to this can be found if you look at who's heading the list of interactive TV backers at the moment. And some of the really big names are starting to put their signatures down on the interactive TV slate. Microsoft chairman **Bill Gates** has made it plain how involved his company plans to become in interactive television. And as he's the man behind the operating system of almost every PC in the world, not to mention the fact that he's the richest man in the US, people tend to take what he says seriously.

Microsoft already has an agreement with global chipmaker Intel and General Instrument corp to collaborate on a machine that could be used for twoway interactive television transmissions. And there are even more bigname partnerships from Microsoft to come.

The company recently held toplevel discussions with Time Warner and Telecommunications Inc about setting up an interactive TV system. No deal has been finalised, but when it is, you can guarantee it will make big waves in the industry.

But when is all this likely to happen over here? SES, the Luxembourg-based owners of the Astra satellites which beam Sky and other programmes across Europe, has promised that it will be at the front of digitally-compressed multichannel TV. The first of its digital satellites is planned to enter service in 1995.

And Renegade, publisher of games by the Bitmap Brothers, have recently signed a deal to convert its titles into interactive TV games. Triton Interactive Television, the other partner, have developed an interface enabling players to phone in and control a game using the phone's keypad. The breakthrough here is continuous recognition of tone signals, giving, so it is claimed, the same level of response as console versions. First game to get the touchtone treatment: *Magic Pockets*. Other Renegade titles such as the brilliant *Sensible Soccer* and the not bad *Chaos Engine* should also appear on the new medium.

Meanwhile the BBC and ITV hope to start 'simulcasting' programmes in digital format alongside normal TV from about the same time. Thanks partly to the scrapping of the proposed fifth TV channel earlier this year, there will initially be enough room for four or five digital channels. But at least 70 digital channels will become available when all of the existing analogue transmissions cease in perhaps 15 or 20 years time.

Whatever happens, television will never again be just the passive experience we know today. E

Interactive TV will spawn a million interactive shopping, movie watching and gaming experiences

Renegade's interactive TV games



***Magic Pockets* will be the first game to get the interactive TV treatment. Under the new partnership between Triton Interactive Television and Bitmap Brothers' publisher Renegade, *Magic Pockets* will come out in a new version that can be played via a standard telephone keypad. Continuous recognition of tone signals allows fast response, at least comparable to other versions of the game, or so the developers claim...**

Renegade's okay-ish *Chaos Engine* is another one that's lined up to get the Triton Interactive TV-touch. Remember this one? We reckon it's a pretty suitable game for playing over the phonelines. It'll still have that unusual viewpoint, where you look down at a weird 45 degree angle



***Sensible Soccer*, which is shortly to appear on the Super Nintendo, is the Amiga's all-time killer app. It could really be the one to get people moving towards the Triton games concept, but it all depends on the level of interactivity that you get over the phonelines. Triton Interactive Television promise you'll get loads. But from some of the sad phone keypad stuff we've seen so far, we'd advise you to try before you buy**

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Hang On. If You Can.

Thursday November 11

future publishing

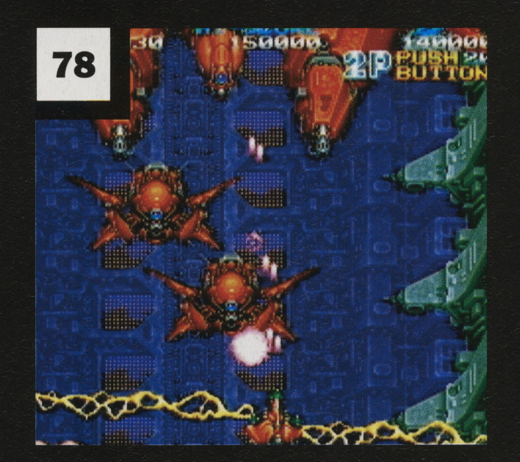
Testscreen

Glad you could join us for the part of the magazine where **Edge** indulges in a spot of games reviewing. Yes indeed.

Not exactly the ground-breaking, pioneering, trail-blazing activity you might expect of **Edge**, though, is it? After all, there's plenty of people who do games reviews.

But **Edge** doesn't just bring you any old games. **Edge** picks out only a select few new releases, the very best new titles – the most technically advanced, the most challenging, perhaps even the most hyped – and finds out what all the fuss is about. These reviews are designed to give you more about a game than just information – they're there to give you a real feel of the spirit and atmosphere of a game.

Quality, then, not quantity. That's what **Edge** is all about. Remember that as you strap on protective clothing, draw a last nervous breath and prepare to go over the **Edge**…



78





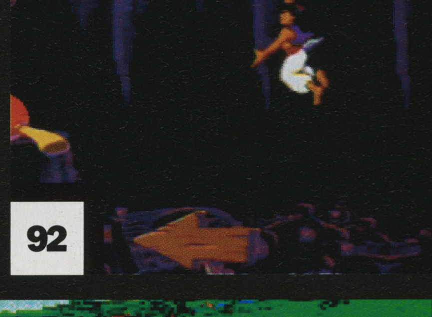


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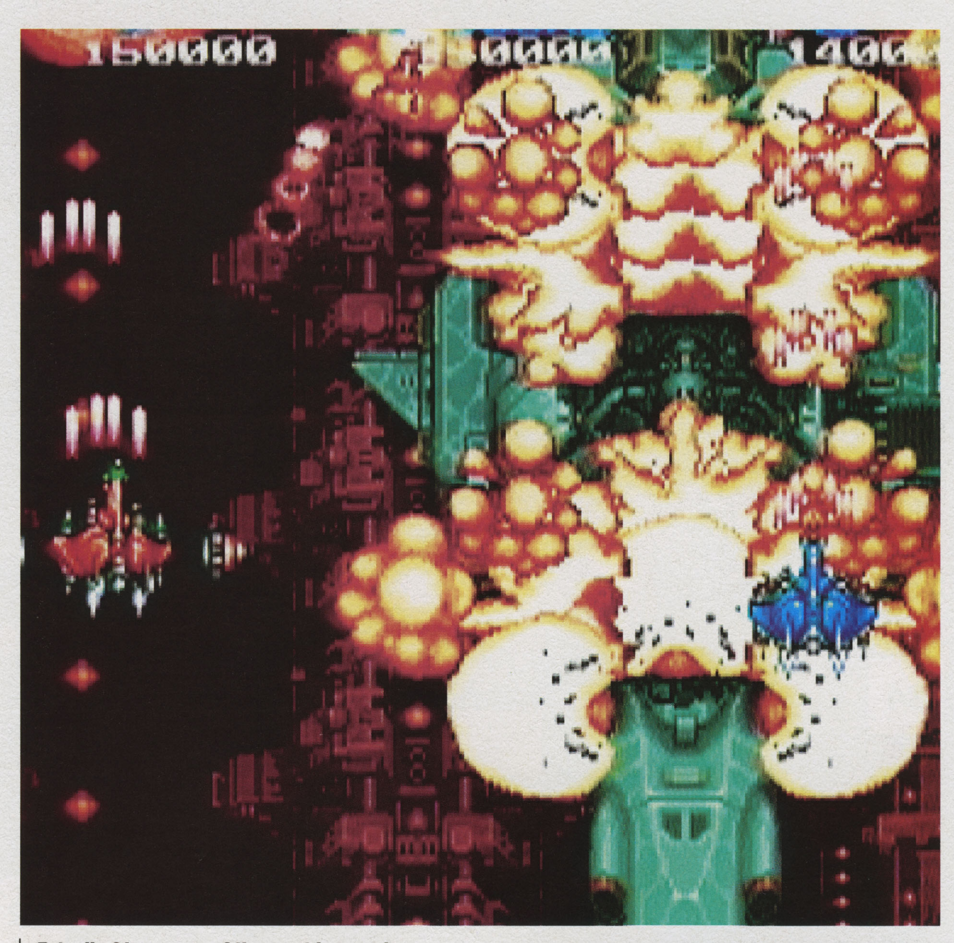
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Tatsujin 2

Format:	FM Towns Marty
Publisher:	Ving
Developer:	In-house
Price:	£90 (Jap import)
Size:	1 CD





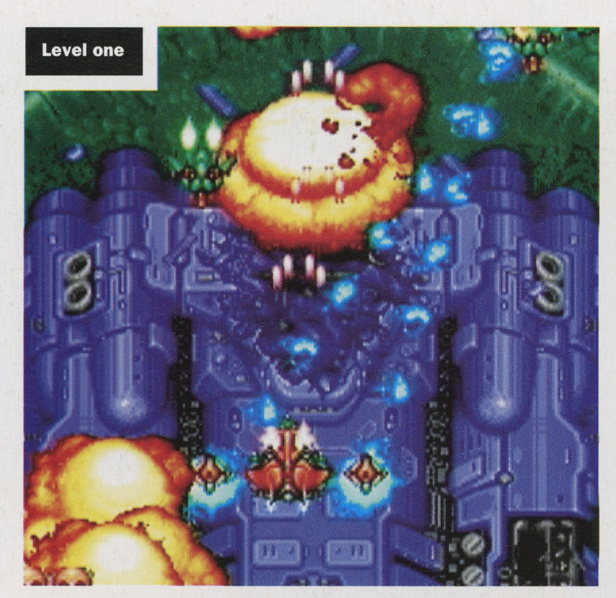
***Tatsujin 2* has some of the most impressive explosions you've ever seen (above), and the twoplayer mode (right) makes the alien-blasting action just that bit more intense**

Fujitsu's Marty has some of the most impressive technical specifications of any CD system out at the moment. And although it's highly unlikely that this great machine will ever enjoy mass European distribution, global interest in the Marty is growing, and fast. Boasting a 16·7 million colour palette, 32bit CPU with the potential for 1,024 hardware sprites – it's easy to see why.

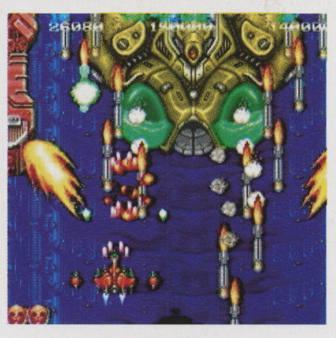
With all this power to play with, the only thing limiting Marty developers is imagination. Psygnosis's *Microcosm*, but for the shallow →

Level **one**

The key to success in *Tatsujin 2* is to get powered-up as quickly as possible. As with most games of this style, the moment you die, you lose all weapons, so concentration is essential – you can't afford to relax. The first level just whets your appetite for what lies ahead. The enemy are not all that intelligent and are easily picked-off.







One of the first tough sections of the game (above), and you've only just started. The explosions are superb (above right) and even the first big boss is no pushover (below right)







This gets our vote for 'smart bomb of the year' award (above). The action quickly builds up (above right), and the level two boss comes at you in many forms, each one harder to kill (below right)

Level **two**

This is where the action starts to hot up. The enemy suddenly becomes more intelligent, and instead of just diving straight into your barrage of bullets, they swerve to avoid them. They have also come far better equipped, and before too long you find yourself trying to outrun hordes of homing missiles. There are also some rather large space stations that need cutting down to size.

gameplay, demonstrated what could be done with Fujitsu's machine and showed plenty of ingenuity, particularly in its image compression techniques. The programmers at Ving may not have matched the sheer quality of *Microcosm*'s velvet smooth graphics, but they've produced a game that's fantastically playable, visually stunning and sonically outstanding. Even so, *Tatsujin 2* is still recognisably just a simple vertically scrolling shoot 'em up.

But all is not lost. *Tatsujin 2*, or *Truxton 2* as it's known over here, is in fact a very great game. At first it's difficult to pinpoint what makes it so brilliant. The levels don't change drastically, neither do the guardians, and the shoot 'em up vertical format is not exactly the latest in gaming technology – so what is it about the Marty version of *Tatsujin 2* that keeps the player enthralled?

Well, it could be the great arcade quality graphics, the likes of which have never before graced any home system, it could be the fantastic explosions you get when the larger →

Continued next page

Thankyou to Raven Games, tel (081) 663 6822, for supplying *Tatsujin 2* and *Galaxy Force 2*

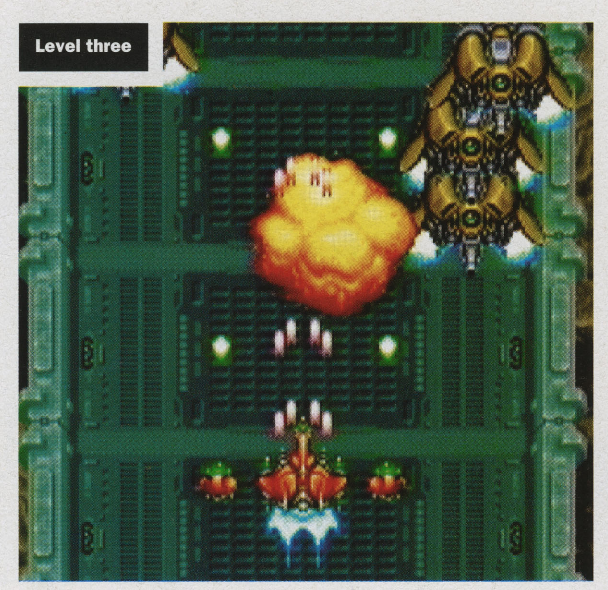
Level **three**

The backgrounds are incredibly detailed and full of vibrant colours, but level three gives you no chance to appreciate them. The moment the level starts, your craft begins speeding along a futuristic highway, and you have to pick off a collection of alien vehicles whose sole purpose is to make your continued existence as difficult as possible.

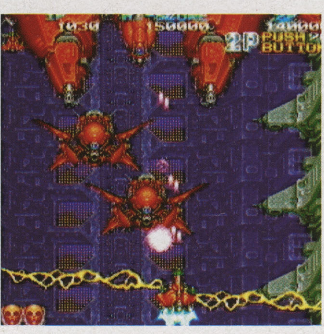
Level **four**

Thought you'd seen it all in level three? Think again. Level four kicks off with large, and incredibly difficult to destroy, alien craft. Ships that would normally make up the end of a level on lesser shoot 'em ups, appear very early on and just keep on coming. Now is the time to use those amazingly destructive smart bombs.

Level three







Your craft suddenly starts speeding up the screen (above) – destroy the ground installations with your homing weapons (above right). To kill the boss, you must blast at his eye (right)

Level four







These rather diminutive aliens cause all sorts of trouble. But don't let their size fool you, they attack in formation and there's plenty of 'em to kill (above). The flying box with the skull on it is actually friendly, you just have to blast it to get extra weapons and ammo (above right). The end of level boss (right) may look a little bit tame, but he's just warming up. Soon the screen will be full of lead, all aimed at you

← enemies die – it could even be the immense feeling of control you get when your ship is fully powered-up. But no. There's one ingredient present in *Tatsujin 2* that seems to be lacking in a lot of software today, and that is, very simply, playability. And for this it's as damn near perfect as it can be.

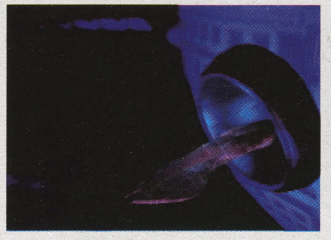
As was the case with last month's *Gradius II* – and any classic title come to that – time erodes very little. *Tatsujin 2* is as great now as it ever was, and this version is by far the best around. Based closely on the original, brilliant Toaplan coin-op, it features fast moving sprites without even a hint of slowdown, tough bosses and jaw-droppingly good explosions. All the elements in *Tatsujin 2* blend to form a brilliant title. You also get the option for two players to simultaneously take on the enemy, and even with two ships, there's no slowdown. It's impressive stuff.

The only slight letdown is the infinite continues, but it's a tough game, and you do need them to make any real progress. Now if only Psygnosis and Ving could join forces, then... well, maybe not.

Edge rating: **Eight**/10

FM Towns Marty

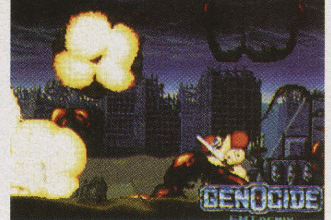
***Tatsujin 2* is a brilliant game, and together with Psygnosis's attractive *Microcosm* and the eagerly awaited *Genocide 2*, it shows that the Marty is setting the way for CD systems. Other games out include *Galaxy Force 2*, one of the first Marty releases and a conversion of a poor Sega coin-op, and the arcade perfect *Splatter House*, now available in Japan**



The ingame screens in *Microcosm* show the graphic potential of the Marty – shame about the gameplay



***Galaxy Force 2* was one of the first Marty releases – it's a conversion of the fairly weak Sega coin-op**



The brilliant *Genocide 2* vaguely resembles *Cybernator* on the SNES – it's due out in Japan soon...

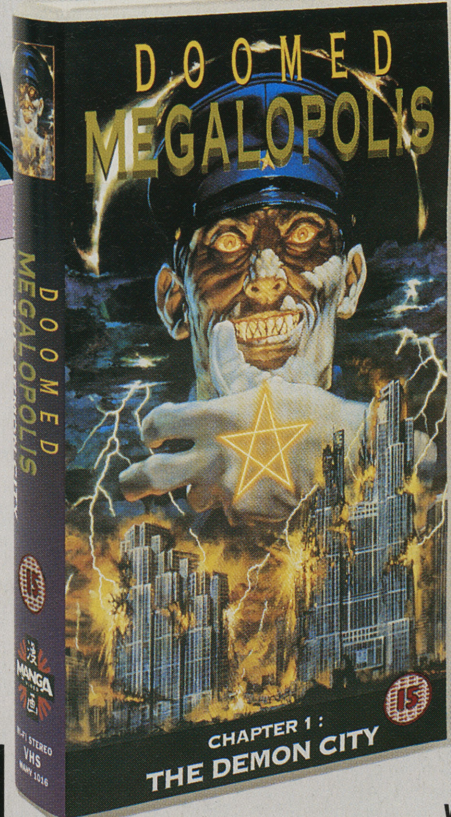
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Thunderhawk

Format:	Mega CD
Publisher:	Core Design
Developer:	In-house
Price:	£45
Size:	1 CD
Release UK:	01/09/93



With the radar down, and that tank heading in your direction, it's all looking rather ominous



Looking back at your own helicopter pad, and the South American mission is about to begin

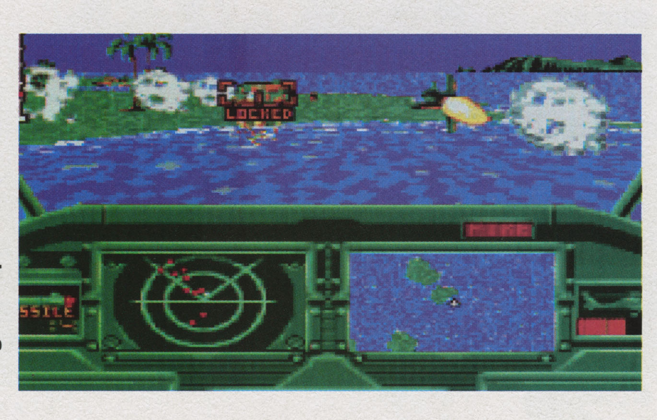
Some people claim that *Thunderhawk* is the first game to show the real potential of the Mega CD. Now that's a big claim. And *Thunderhawk*, however you dress it up, is just another chopper sim.

Still, it's chock full of great presentation screens, from the stirring intro through to the better animated scenes – like the bit where your chopper takes off, or the bit in the projector room where the mission is explained.

Visually, Core's *Thunderhawk* is a very appealing product. And yes, the game proper is a big improvement over much of the trash that Mega CD owners have had to endure so far – but is its beauty still only skin deep?

There are a variety of missions – ten in total – and each is split into a number of sections. The missions are all similarly structured: ie seek out a destroy a variety of enemies – the only real difference is the places in which the devastation takes place.

The graphics convey a good feeling of speed, and you get a choice of three weapons: cannons, rockets and missiles. Using your onboard radar, targeting and gunning down the enemy is simple. Almost too →



Using a custom graphics chip, Core's *Thunderhawk* looks stunning. It's not just limited to doing totally flat and boring landscapes either

Select any of the ten missions you like. A sampled voice will explain the mission in detail

Introduction

In the projector room, more detail is given to you about the mission, visually as well as verbally

Mission **breakdown**

Those *Thunderhawk* missions in full:

1 **Arms Running** (South America) fly in low and destroy a small terrorist arms plant: Eliminate terrorists.
2 **Stealth Down** (South America) a stealth bomber has crashed in the jungle. Prevent enemy capture.
3 **Canal Crisis** (Panama Canal) Wipe out hostile shipping and allow merchant fleet to resume trade.
4 **Recapture Town** (Central America) guerrillas have captured a civilian town. Destroy enemy base and liberate the town.
5 **Bio Research** (Alaska) a research station needs investigating. Hostile forces are suspected to be in the area.
6 **Convoy** (Eastern Europe) a medical convoy needs a strongarm escort to get into a besieged town.
7 **Liberation** (Middle East) assist friendly forces recapture territory and suppress enemy.
8 **Oil Dispute** (Middle East) Defend an oil rig against incoming enemy.
9 **Chemical Warfare** (S E Asia) Destroy chemical weapon facilities to halt an invasion of neutral territory.
10 **Piracy** (S China Seas) Take out enemy ships, and defend friendly vessels.



Alaska

The enemy are well protected: so wait till you get missile lock

The Alaskan level is quite tricky. Radio contact is down and the chopper's danger sign is flashing (above left). Homing missiles have to be used sparingly and accurately – save them for a real target, like this enemy base (above)

← simple. Because the radar is very accurate – not a bad thing in itself – you can fly each mission almost totally ignoring the main play area, and this is certainly a bad thing.

You have total freedom of movement within a large perimeter and once your mission is complete you just head out of the perimeter back to base and the next mission.

Relying on a dedicated graphics chip, the scaling effects are very impressive, as is the level of detail, and it can only be the sign of things to come for the Mega CD.

Overall *Thunderhawk* plays well enough – if a little simplistically – but It's ironic that one of the best Mega CD products still doesn't fully use the machine's potential.

Things are moving in the right direction for the Mega CD, but don't expect *Thunderhawk* to keep you entranced for weeks – it won't.

Sill, if Core can add substance to these visuals for their next Mega CD product, we could be in for a real treat.

Edge rating: **Seven**/10



Middle East

Visually the most impressive of the missions (below) is set in the Middle East. This level requires all the usual gun toting, and great skill and dexterity, as you fly into and around some rather large rock formations. The enemy are well entrenched, too

The radar (left) shows many incoming missiles. The enemy use the rocky desert scenery to their advantage, appearing at the last possible moment, guns blazing

Jurassic Park

Format:	SNES
Publisher:	Ocean
Developer:	In-house
Price:	£55
Size:	8 meg cart
Release UK:	Out now

Spielberg's Jurassic Park hit the big screen on a wave of hype this Summer. And many people believe the big screen is where these prehistoric beasts should have stayed.

Software developers normally adopt a safe approach when converting an action movie, so film tie-ins tend to be straight platform-based shoot 'em ups. But Ocean's *Jurassic Park* is an exception to this rule. And compared to the dire Mega Drive version, which was coded in-house at Sega, Ocean's game isn't too bad.

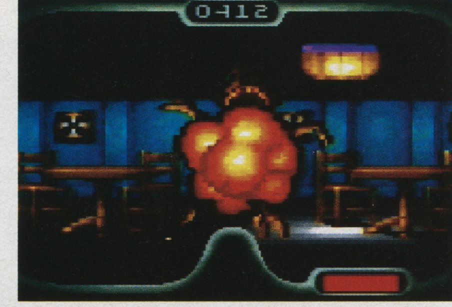
Many people thought *Jurassic Park* would be a rushed and unfinished project, but happily the SNES version has managed to come out with a few surprises. The game does have its moments – like the way the music changes to suit the action, and the way that the most dangerous animals in the park hide behind the trees and pounce on you before you can get your grenades out.

The exterior scrolling is smooth, the sound is excellent and the internal 3D sections of the game are suitably dark and brooding. Sadly, the main problem with *Jurassic Park* is that overall there is a distinct lack of excitement.

To begin with a lot of time is spent aimlessly wandering around and avoiding the dinosaurs – very little help is given in which direction you should be going and exactly what you should be doing. Eventually you'll bump into an information post where your first real mission is explained – get to a hut and turn on the park's power using the generator.

Great. Now where's the hut? After much roaming and dino carnage, mentally noting every path, you eventually find it. Here the view changes into 3D perspective. But again a large →

Inside the visitors' centre (below) another raptor makes for you. Sadly, this one seems to have taken the full impact of your missile launcher



Full of vibrant colours, the outside bit of *Jurassic Park* looks great. Here, dedicated paleontologist Alan Grant pauses to electrocute a 12 foot 'raptor





← portion of time is spent searching, this time for the generator.

Overall the action is inconsistent and the game leaves an impression of uncertainty – it doesn't quite know which way to go. There's no time limit given to complete the tasks, and as a result there's no real urgency. You're given too much freedom, and the outcome of this is that you'll find yourself just wandering around in a haphazard sort of way.

Nevertheless, given the quality of most film tie-ins, *Jurassic Park* is one of the better licences. With slightly improved game design it could have been the best.

Edge rating: **Six/**10

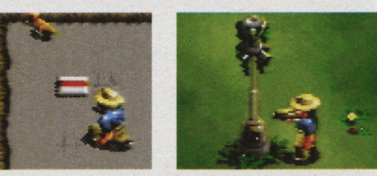
Outside





Many puzzles have to be overcome to gain access to later sections (below) – you wish to cross the river, but how do you make a pontoon bridge?



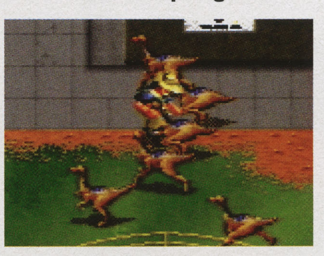


Ignoring the sign, Dr Grant gets a shock (top) and a dino pays the price (middle). Find the ID cards (bottom left) and the posts (bottom right)

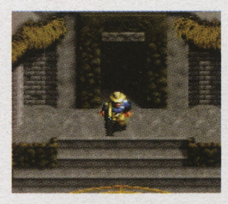
Outside

The park's most dangerous species have broken loose and are now free to roam. The velociraptors pose your greatest threat: they move incredibly fast and are very hard to stop. The T-rex also makes an appearance – but only later in the game. Survival is only made possible through the assortment of weapons laying around. But weapons aren't the only things that can found in the park: important items such as ID cards can be found on the roof-tops of certain buildings, which are then later used to access the park's computers. Varying between the indoor and outdoor sections is a not just another gimmick in *Jurassic Park*: this time it's essential.

Remember this scene from the film? Dr Grant runs straight into a bunch of those little scampering dinos



The visitors' centre is easy enough to find (below left), but first get to the utility shed to switch on the power, this is slightly harder (below right)





Inside



After much probing, the generator room has at last been found (above). Now you simply turn the generator back on. Unless the raptor waiting around the corner stops you (left)



Once found, the night goggles allow you access to out-of-bounds dark interior sections (right)

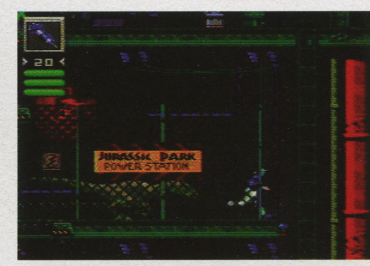
Mega Drive



Sega's own Mega Drive version is inferior to Ocean's. It's less demanding and just uses the same old tried-and-tested platform format (stretch, yawn)

Inside

The game changes massively in style and mood when you enter a building. This time the action is shown in a firstperson 3D perspective – which bears more than just a passing resemblance to *Wolfenstein* on the PC – only it's not as smooth. Inside the park buildings the 'raptors lurk in wait for you – but they're not as dangerous as they were outside, and weapons are readily available so dispatching them is much easier. Some buildings, such as the visitors' centre, have more than one floor. Lifts enable access to the other floors, and some floors require you to use the night goggles which are found in the outside section. Somewhere...



Street Fighter II

Special Champion Edition

Format: Mega Drive
Publisher: Capcom
Developer: In-house
Price: £60
Size: 24 Mbits
Release UK: October



This is India, complete with (take our word for it) irritating elephant noises in the background

In *Turbo* mode, or *Hyper Fighting* as it's known in this version, Zangief is a very challenging character. As he demonstrates here...

The arrival of *Street Fighter II Turbo* on the Super Famicom back in July was effectively another big 'ner ner, ya boo sucks' from Nintendo to Sega.

By the time it came out, Nintendo had already had the first game for over a year. And the sequel that honed the magic formula to virtual perfection was probably just a little too much for their main rival to stomach.

So, by means of compensation, and to show that they're just as big pals with Sega (ahem) as they are with the big 'N', Capcom promised them something really special – The *Special Champion Edition*.

But after two brilliant SNES versions and an out-of-the-blue and equally impressive PC Engine game, Mega Drive owners were counting highly on a good version to keep up. And as luck would have it (phew eh, Sega?), they've got it.

SF II on the Mega Drive is just as playable (mumbled complaints about Sega's six button joypad aside) and just as fast as *SF II Turbo* on the SNES.

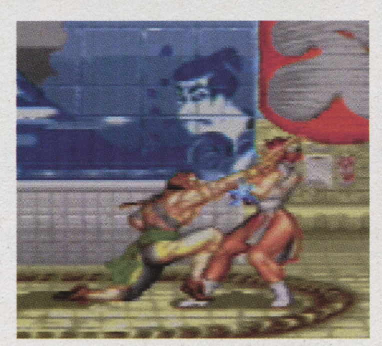
In *The Special Champion Edition*, you'll find the *Champion Edition*, *Hyper Fighting* (*Turbo*) and there's even a neat option for setting up group battles or tournaments.

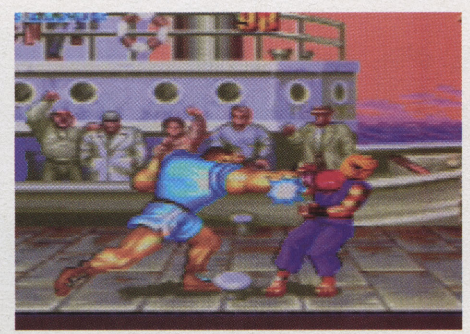
But, on a different slant, though, they're hardly 'special' enough to convince the die-hard *SF II* fan that it was worth waiting 18 months for (resisting the temptation to get a SNES and *SF II*, that is).

And some might be disappointed (unrealistically of course) that the graphics fail to match *Turbo*'s on the SNES. However, what it lacks in colours and smooth shading is made up for by the size of both the characters and the screen itself. They're slightly taller – although it's a great shame that this will go largely unnoticed on the squashed Pal screen of the UK Mega Drive. As well as the 17% speed loss, too. Oh, and the sound effects are a bit disappointing – even the Engine's crummy sound chip coped better than this.

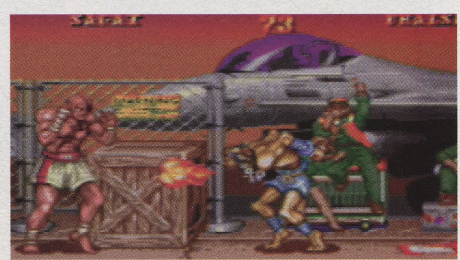
Nevertheless *Special Champion Edition* is →

The bosses



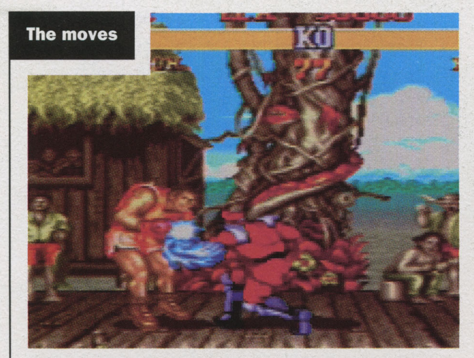


Vega carves up Chun Li (above). And Bison's flaming torpedo attack (left) is difficult to do, but well worth it...

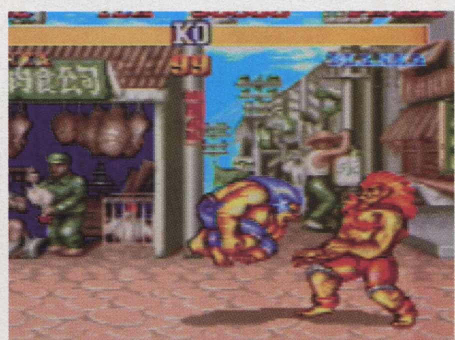


Time for evasive action – Dhalsim's yoga fire hurls towards Sagat's shorts. And Balrog's turn punch count (above) can be heard in *Turbo* mode

The moves



Although the Mega Drive's graphics are pretty good, note how they do look washed out in places







From the top: Blanka has a new vertical roll in Turbo mode (here's the normal one). Middle: More parallax than the Engine version but otherwise very similar. Above: Ken 'Shoryukens' Honda

← obviously still a pretty great game, and it's certainly in a class of its own on the good old Mega Drive.

But some would say that the appeal of the game has already been tainted by the arrival of the *Turbo* on the SNES (admittedly so far only on import), which arguably feels better simply because of the design of Nintendo's smart joypads.

And remembering that the majority of Sega Mega Drive owners will have to buy two new pads to get the most out of this version, Nintendo's *Turbo* starts to seem a very good option indeed.

Special Championship Edition is a brilliant conversion, undeniably, but sadly it's not *quite* as 'special' as the long delay suggested it would be.

Edge rating: **Eight**/10

Champion Edition

The same as the coin-op, allowing you to select the four boss characters, and including the *Champion Edition* rules and moves. But the booklet doesn't explain them. How helpful for novices.

Hyper Fighting

This is genuine street fighting perfection. It gives the new moves – the hardest of which (Dhalsim's teleport) is easier on the Mega Drive's joypad than on the SNES. You also get different colours and ten speeds (as in *Turbo* on the SNES). This mode reaches breathtaking pace – you'll never go back to *Champion Edition* once you're addicted.

Group Battle

Still only one-on-one action, but with the addition of either one or twoplayer group battles where sets of players are pitched against each other. There's a choice of match play – up to six different pairs facing each other round after round, and an elimination mode, where pairs of characters face it off with the loser getting knocked out each time.

Turrican 3

Format:	Amiga
Publisher:	Renegade
Developer:	Factor 5
Price:	£26
Size:	1 disk
Release:	October

Level one

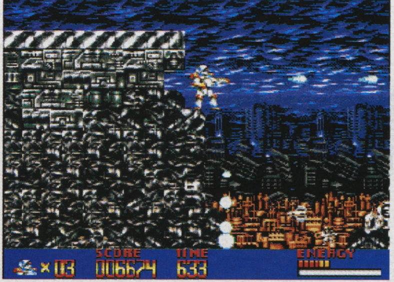




Things start off in true *Turrican* style (ie just the same as they always did), but there's no mountain this time. It's a big shame that the graphics aren't as impressive as those in the excellent *Turrican II*

Level three





The in-the-sky section (left) at the beginning of the third level is all a matter of timing, but it's not as tough as it should have been. And the next bit (right) isn't very tricky, either

Level four

The H R Giger-inspired graphics of Level four are the best in the game – and there's full colour multi-directional parallax scrolling at 50 frames/sec. Here, *Turrican* swings from his arm thing

Some people like the *Turrican* games a lot. They like the technical wizardry and attention to detail; the variety in the graphics and music. But many find them tedious and unfocused.

The one thing about *Turrican* you can count on is that no matter how many versions appear, it'll always be more or less the same game. Run, Jump, shoot, collect icon... and shoot again. And *Turrican 3* is little different.

Coming on a single disk, it has 15 levels, multi-layered parallax scrolling, and over twenty different tunes – *Turrican 3* is certainly a masterpiece of compression. But it's not quite the game it claims to be.

For a start, the gameplay has supposedly been improved with a Bionic *Commandos*-style extending arm – something that, if done well, can improve things no end. But it hasn't been done well at all. The extension of the gadget is tricky enough, but the release mechanism is horrible, so instead of *Spiderman*-style platform to platform swinging, more often than not, you'll just be dangling around like a pendulum.

The biggest problem *T3* has in store for *Turrican* fans is that there's no improvement. In fact, the second *Turrican*, created by **Holger Schmitt** and **Manfred Trenz**, still looks and feels even a bit slicker than this, and it was tougher, too. And **Chris Hülsbeck**'s music, arguably *Turrican*'s strongest feature, here fails to match *T2*'s brilliant range.

Of course, there are moments that really make you wonder how they managed to get away with so much on a standard Amiga. And the gameplay's certainly more focused than before, feeling more like *Super Turrican* on the SNES than the previous games.

Still it will best appeal to the kind of player who cares just as much about the frame rate as the quality of the action.

But that's *Turrican* for you.

Edge rating: **Six/**10







November 11 – 14

London Olympia

Play a few games and go home with a cheque for £10,000

So you reckon you're the country's best gamesplayer?

Right then: it's time for you to put that claim to the test – and walk away with a cheque for £10,000. In addition, get yourself splashed across every newspaper in the country and on every TV channel.

That's what happened to last year's winner of the National Games Championship, Allen Brett. (You'll probably have seen him writing regularly for Super Play magazine, another of the perks of winning.)

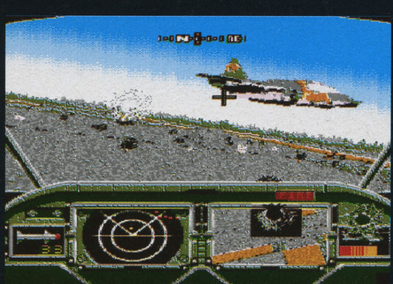
The cost of entry: precisely nothing.

On this page you'll see the dates and venues for the first round eliminators. They're being held in Virgin Retail outlets in major cities across Britain over the next few weeks.

All you have to do is turn up... and play. If you're good enough – and needless to say you'll have to be *very* good – you'll be into the next round. And after that: the finals beckon. They take place at the Future Entertainment Show in London on November 11-14.

The National Games Championship is organised by Future Publishing, the people who bring you **Edge**, the Future Entertainment Show, Super Play, Amiga Format, MEGA, Total, Sega Power and a dozen other not half bad magazines.





The games you'll be playing: the excellent *Pinball Fantasies* on Amiga CD32 (above), *Mario All Stars* on the SNES (above right) and *Thunderhawk* on Mega CD (right)

Dates and venues

18 – 21 October		Final on **22 October**
East Kilbride	Games Centre	Glasgow Megastore
Falkirk	Games Centre	
Edinburgh	Games Centre	
	Megastore	
Glasgow	Megastore	
25 – 28 October		Final on **29 October**
Bolton	Games Centre	Manchester Megastore
Stockport	Games Centre	
Manchester	Megastore	
Birmingham	Megastore	Birmingham Megastore
Coventry	Megastore	
Bromley	Games Centre	Marble Arch Megastore
Croydon	Games Centre	
Guildford	Games Centre	
Ilford	Games Centre	
Kingston	Games Centre	
Watford	Games Centre	
Marble Arch	Megastore	
Megastore	Megastore	
Bristol	Games Centre	Cardiff Megastore
Cardiff	Megastore	
Dublin	Games Centre	Dublin Megastore
	Megastore	
Belfast	Megastore	Belfast Megastore
Gateshead	Games Centre	Newcastle Megastore
Newcastle	Megastore	
Sheffield	Games Centre	Sheffield Megastore
	Megastore	
Norwich	Megastore	Norwich Megastore



Photograph: Peter Canning

So here's the full prize breakdown. You win: 1 Philips CD-i 210 player, 1 Philips Digital Video cartridge; and seven great CD-i games – *The 7th Guest, Kether, Link: The Faces of Evil, Zelda: the Wand of Gamelon, International Tennis Open, Inca,* and *Earth Command*...

Win a Philips CD-i

PHILIPS

This is the page you read if you want to win a Philips CD-i player, an FMV cartridge, and seven brilliant CD-i games. If not, just turn over...

Philips are giving away a brilliant prize to an **Edge** reader this month. Just answer a few simple questions and walk away with one of those amazing newly designed Philips CD-i players, worth £400, a Digital Video cartridge, to give your CD-i full-motion video capabilities (worth £150), and seven top games – including the new CD-i version of *The Seventh Guest* – the first ever Digital Video game.

Interested? Well, here's the questions: What is the Philips CD-i 210's processor speed? And how much RAM does a CD-i equipped with the DV cartridge have?

Put the answers on a postcard, along with your name and address, and post it to us at: **Edge, 30 Monmouth St, Bath, Avon BA1 2BW**. The winner will be announced in **Edge** three.

Smallprint: No employees of Philips or Future Publishing may enter this competition. Well, they can if they want, but their entries will just end up in the bin. **Edge**'s decision, however wayward or capricious it may appear to the untrained eye, is nevertheless final.

Aladdin

Format: Mega Drive
Publisher: Sega
Developer: Virgin
Price: £45
Size: 16 meg
Release UK: October

In the highly competitive and overcrowded world of platform games, Mega Drive owners are spoilt for choice. Any new release has to be pretty damn good to stand out of the crowd – it must literally pounce from the screen, seize you by the throat and deny you air.

Virgin's *Aladdin* does just that. Entrancing you with its animations, delighting you with its humour and charming the pants off you with its great playability.

The animation is astounding, and the whole thing moves so smoothly and so fast that it's easy to see where all those megs went. The levels are well thought out and each stage exercises your joypad skills to the full.

Aladdin is so full of great touches and detail, it's amazing the cartridge doesn't burst. Little touches like the way when you leave Aladdin alone for a while he starts juggling apples, or the way the camel spits when you land on his back – all these give the game a very polished and comical feel.

Apples can be found lying around which can be used as a sort of fruity grenade, and your sword can also be used to slice your way through the ten levels. The action is fast and there are plenty of obstacles to overcome – the easiest of which are Jafar's guards. Sword fights end very quickly, but there are so many of them that this doesn't seriously detract from the gameplay.

Talking of gameplay, there's nothing worse than a game that looks fantastic but is about as much fun to play with as a bag of mud. Fear not, *Aladdin* is brilliantly playable; you have total control over what your character does, and the difficulty curve is set just right. In fact everything in it is just perfect.

Well, almost perfect. The sound could have been better – but that's a minor quibble.

Anyway, at last the Mega Drive has a new platform king. Move over spiky blue one, *Aladdin*'s in town.

Edge rating: **Eight/**10

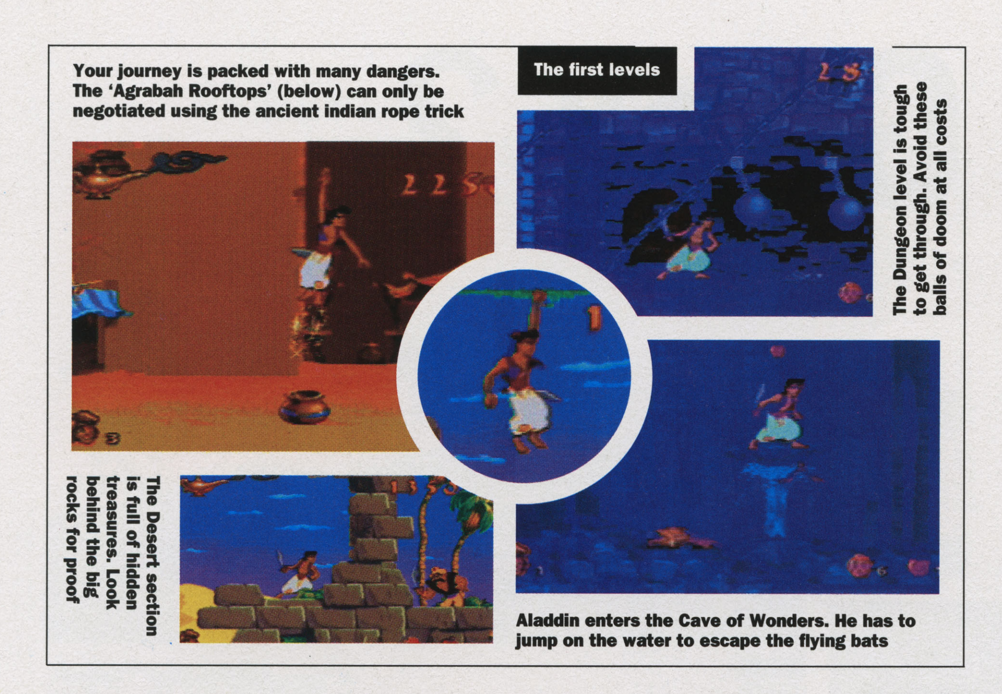
An ambush attempt (below), Aladdin is distracted while another guard closes in



Visually one of the most impressive levels, Aladdin finds himself locked in the Sultan's dungeon. Each level introduces some new play element, here steps in the walls appear and disappear at random

Your journey is packed with many dangers. The 'Agrabah Rooftops' (below) can only be negotiated using the ancient indian rope trick

The first levels



The Dungeon level is tough to get through. Avoid these balls of doom at all costs

The Desert section is full of hidden treasures. Look behind the big rocks for proof

Aladdin enters the Cave of Wonders. He has to jump on the water to escape the flying bats

The Escape



Jafar's palace



Using all your skills you have to outrun large balls of flames in the Escape section (above). Your life is made easier if you use your magical flying rug (right)





The adventure is reaching its climax. The Sultan's palace (left) is the penultimate level. The final battle takes place in Jafar's palace (above)

Aladdin's levels

The adventure begins in the **Agrabah Market**. Here many sword fights take place and the player is introduced to the graceful art of apple throwing.

The **Desert** is the next destination. There are many useful items hidden behind huge rock formations and your athletic abilities are called upon as you leap gaping chasms.

The **Sultan's Dungeon** is your next port of call. Skeletons are the main enemy, but you'll also have to learn to overcome the moving platforms in order to proceed to the next bit – the **Cave of Wonders**.

Tricky level this, bats fly around and generally cause a nuisance, while there are even more moving platforms to negotiate.

If you're successful here you'll have to make **The Escape**. This is a fast-moving level, with large hot boulders chasing you across the screen. Be fast or be crushed.

After making a successful escape put your feet up and and enjoy a **Rug Ride**. Just simply avoid the rocks.

Your journey is nearly complete. Now Aladdin gets transported **Inside A Lamp** and has to fight his way out so as he can make it to the **Sultan's Palace** in time. Take on the Sultan's guards across more platform action then take on the Sultan himself.

Lastly, **Jafar** awaits you in his palace. This time it's not a scrolling level, just a plain fight to the death with the evil Jafar.

The man behind *Aladdin*



David Perry – the man rumoured to have picked up a cool $250,000 for his programming work on *Aladdin*

Success is written all over **David Perry**, the 25 yearold programmer of *Aladdin* who left the UK to work for Virgin Games in Irvine, California almost two years ago. Dave's first game for Virgin was the solid *Global Gladiators*, followed by *Cool Spot*, the universally applauded platformer. More recently, it's been rumoured that he was paid a hefty $250,000 to program both *Aladdin* and *Jungle Book*. That's why he can afford to drive a $40,000 sports car, and live in a pool-equipped apartment by the coast. One thing's for sure, the former Probe employee hasn't had it so good.

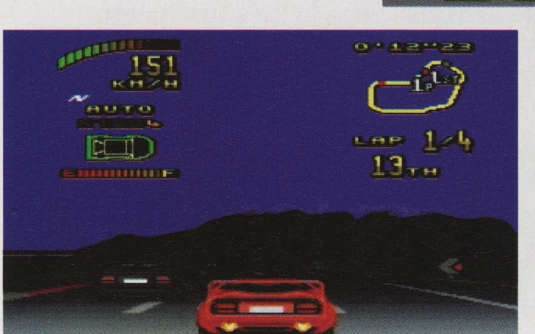
Disney's involvement with Virgin also certainly helped to shape *Aladdin*. To create the game's stunning animation and to finish it in time for an Autumn release meant using 10-15 Disney animators who were in constant collaboration with Virgin. What they didn't know about games animation was more than made up for by their original ideas.

It's very easy for designers to fall into a set procedure when doing a game like this, and it's surprising – particularly when you see the game – just how little time the project was allocated. Including raw programming and development time, *Aladdin* was completed in around three months. Virgin's next Disney game is *The Jungle Book*, this time on both Mega Drive and SNES. And so far it's looking equally polished, too.

Top Gear 2

Format:	SNES
Publisher:	Kemco
Developer:	Gremlin
Price:	£45
Size:	8 meg
Release UK:	October





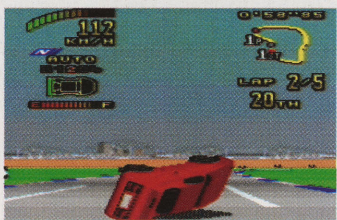
***Top Gear 2* improves on most of the original's raw bits. In one player mode (above left) you now have the luxury of a full screen – giving the game a more arcade look. The twoplayer option (above right) still uses the old tried-and-tested split screen formula, though**



Travelling through the 16 countries you meet all sorts of hazards – the most obvious being the weather (above). Ice, rain, fog and snow all play a big part in slowing your progress

Fog presents your biggest problem, (below) especially at 168kmh...





You can even do clever acrobatic car stunts if you want to (above)

The sequel – the most lucrative and erratic of genres. An innovative marketing idea that spawned some of the best videogames ever – *Street Fighter II*, *Mario 3*, *Kick-Off 2*, to name but a few.

But survival in the land of continuation isn't easy. Software development is moving at a hectic pace, and for a sequel to survive the constant advance of technology, it must be special, very special.

Top Gear 2 follows the well worn path of the 'nearly' brigade. *Super Formation Soccer 2*, *Populous 2*, and *Final Fight 2* all fall into this bracket. All followed great original games, but the sequels did nothing radically new to excite the player.

It's ironic because in *Top Gear 2* everything has been improved. The look, the sound, the difficulty and the options all improve on the original version. But then, the original version never really utilised the full capabilities of the SNES – it looked a bit raw and it sounded even worse. Still it definitely had that vital ingredient – playability.

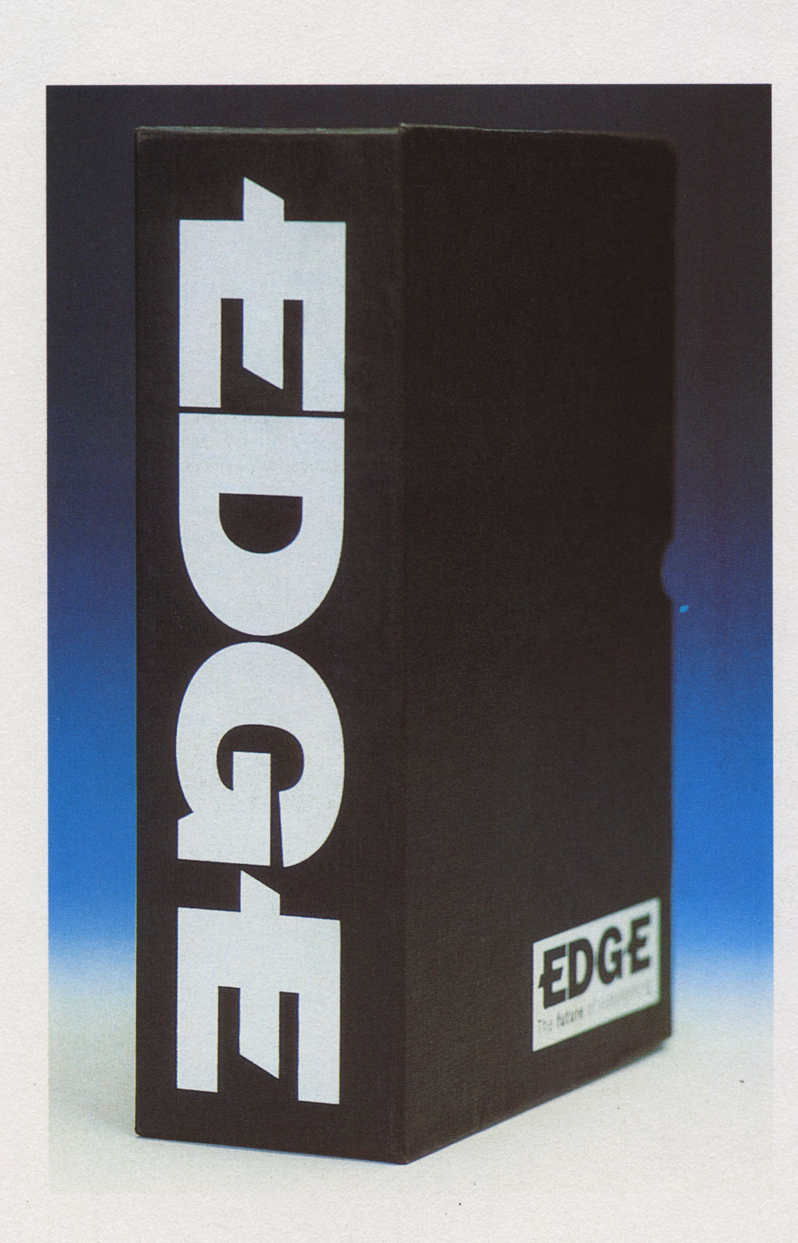
Top Gear 2 uses the hardware much better, but in spite of all the serious improvements Gremlin has made, playability hasn't really moved forward at all. The car doesn't respond particularly well to your commands. And cornering is no longer a skill, it's a chore.

This type of game has been around for almost a decade now – *Pitstop 2* on the C64 was one of the first. Since then it has been copied and imitated to death. And *Top Gear 2* is the game that stayed on for the funeral.

So, just another sequel. It's nothing new. It won't take the world by storm. Things have moved on from this, surely? E

Edge rating: **Six**/10

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Edge three is onsale Thursday 28th October. To make sure of *your* copy, fill in the reservation coupon below and hand it (or a photocopy) to your newsagent, who will then keep an issue of **Edge** for you each month.

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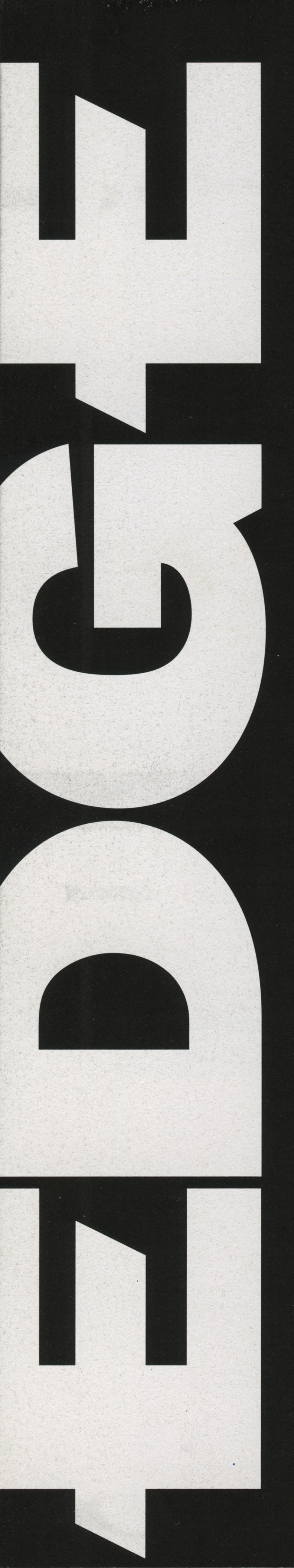
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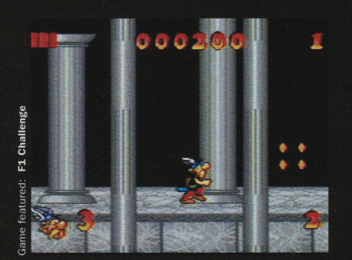
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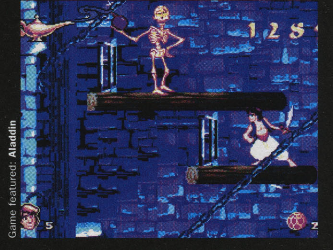
Game featured: F1 Challenge

Magazine: **Sega Zone**
Format: **Sega**
Price: **£2.50**

'**The October** issue of Sega Zone went onsale on Thursday 23rd September and there are probably still some left if you hurry. There's a review of **Asterix And The Secret Mission**, another of the astonishingly fabulous *Rocket Knight Adventures* and we also take a look at *Thunderhawk* – the best reason yet to get a Mega CD. There's loads of other stuff as well, but that's not really what we want to talk about.

Because more important than all that is the November issue which will be on sale on Thursday 28th October. It's going to be the first issue of the new-look Sega Zone and there's not much we can say about it, except that it'll come with three great gifts and it'll definitely be worth waiting for. No, really.'

Tim Norris, Editor


Game featured: Aladdin

Magazine: **Sega Power**
Format: **Sega**
Price: **£2.50**

'**Destined to** be one of the biggest Sega titles this Christmas, Disney's **Aladdin** gets its first review in this month's Sega Power. Find out why it represents the next generation of platform games. You can also find definitive reviews of blockbusters like *Sonic* on CD, the long-awaited *Street Fighter II* and *Robocop 3*, plus playing guides to *Flashback*, *Land Of Illusion* and tips on a score of others. Plus, get clued up on the hot news from the recent computer show. See for yourself why Sega Power is way ahead of the pack.'

Mark Ramshaw, Editor


Game featured: Jurassic Park

Magazine: **Game Zone**
Format: **Nintendo**
Price: **£2.50**

'**This is the** big issue. Game Zone November is essential reading for all Nintendo owners. With a radical new look, window sticker, pin badge, 32 page 1994 previews book and that inimitable GZ style, you just have to check it out. Game Zone is the mag with a brain, written for people like you, who enjoy the occasional sentence with their pictures.

Game Zone's reviews are hard but fair; and this month we're hard but fair on **Jurassic Park** (Game Boy/NES/SNES), *Rock 'N' Roll Racing* (SNES) *Alfred Chicken* (NES), *Road Rash* (Game Boy), *Cosmic Spacehead* (NES) *Ren & Stimpy* (SNES) *Championship Pool* (SNES) and more. These are backed up by storming features and in-depth previews – *Wolfenstein*, *Super Empire Strikes Back*, *The Smurfs*, *Lawnmowerman* and *Total Carnage*. Game Zone is onsale October 14. Be there.'

Trenton Webb, Editor

magazines because we're good like that



Game featured: Sonic the Hedgehog CD

Magazine: **Mega**
Format: **Mega Drive/CD**
Price: **£2.50**

' **The number** 13 maybe unlucky for some, but not for anyone who buys issue 13 of Mega (onsale 16th September). With the WORLD EXCLUSIVE review of **Sonic the Hedgehog CD** and fourteen other games including *Thunderhawk*, *Silpheed* and *Mortal Kombat*, there's more Mega Drive game coverage to keep even the most up to date console freak happy. But there's more. With an in-depth interview with the new presenter of the Gamesmaster TV programme, Dexter Fletcher, oodles and oodles of tips and more Mega Drive related stuff than you can shake a very large stick at. You just have to buy it. And that's an order. '

Andy Dyer, Editor


Game featured: NHL Hockey

Magazine: **PC Format**
Format: **PC**
Price: **£3.95**

' **In the next** rootin' tootin' portion of PC FORMAT (onsale 30th September for a paltry £3.95) you can find out whether EA Sports' **NHL Hockey** can cut the ice on the PC. We also review *Seal Team* and *Archer Maclean's Pool*, while wondering whether Origin has lost its golden touch with its latest release, *Wing Commander Academy*. If you want to know what games will sound like in the future, take a look at our full run-down on Gravis' funky new Holographic 3D Sound System, which might make stereo a thing of the past. And on the seedy, sleazy side of life, we investigate how new CD technology is making it easy for perverts and paedophiles to distribute illegal pornography. Oh yes, and HMV is stripped bare to find out whether they're serious about selling videogames. PC FORMAT – because there's more to life than games (but not much more). '

Mark Higham, Editor


Game featured: Jurassic Park

Magazine: **Super Play**
Format: **SNES**
Price: **£2.50**

' **Nintendo isn't** popular amongst many third party developers. In the November issue of Super Play (out on Thursday 7th October) we find out why. There is also a top guide to every football game available on the SNES, a review of **Jurassic Park**, and an interview with Silicon Graphics, makers of the new Nintendo 64bit entertainment machine. Also there'll be reviews of *Top Gear 2*, *Lamborghini Challenge*, *World Heroes* and *Captain America*. And a massive *Mario Collection* Players Guide. 'Oh goodness,' you're thinking, 'Super Play is packed to the brim with the latest and best Nintendo stuff.' And you're damn right. '

James Leach, Editor



Game featured: Diggers

Magazine: **Amiga Power**
Format: **Amiga**
Price: **£3.50**

' **For the** world's first (and best, natch) reviews of all the top Amiga games, there's only one magazine to get. The October issue of AMIGA POWER comes with world exclusive rundowns on three top driving games (*Micro Machines*, *Burning Rubber* and *F17 Challenge*), as well as the first ever CD32 game, **Diggers**, and Psygnosis' long-awaited *Hired Guns*. There's a staggeringly complete guide to the wonderful world of Virtual Reality, everything you ever wanted to know about game music, and even a load of free postcards stuck to the front. Could you possibly ask for anything more from Britain's bestselling Amiga games magazine? Thought not. '

Linda Barker, Editor



viewpoint

What's your **opinion**? **Write** and **tell** us: **Edge** letters, 30 Monmouth Street, Bath, Avon, BA1 2BW





The brilliant *Jagganath: Engines of Destruction* intro sequence, but the game's been axed. See letter from its designer, Jonathan Lee Howard

I was delighted to see that the 3DS showreel of *Jagganath: Engines of Destruction* made it into the 'Top Five Intro Sequences' chart of **Edge** one.

As the game's designer, I naturally feel very paternal towards it and was happy to pass on **Edge**'s comments to Angus, Jagganath's animator, and Paul, the musician.

What you may not know is that *Jagganath* has been written off. It, Microprose Manchester, Microprose Leeds and many jobs were all victims of a corporate reorganisation whose logic remains opaque to all but Spectrum Holobyte.

Best of luck with future issues of **Edge**.

Jonathan Lee Howard, Cheshire

We're sorry to hear about Microprose's redundancies and it's a great shame that a game that seemed to have so much potential has been axed. Sadly, the UK end of the operation seems to have suffered for the excesses of the US end.

In the UK, we have the world's strongest concentration of gamesmaking talent, but it's small teams who are the most creative. In the US, they tend towards teams of thirty of forty working on one single project. Can that be justified?

Do they really get better results?

Congratulations on the first **Edge** – it was stunning. Towards the end you invited readers' views

'What did I think? Liked it a lot. I was really impressed that your 3DO article was not an exercise in arse licking, no, you pointed out the problems the 3DO Company are having with the development systems etc, and the timescale of the launch. Liked that.'

Anthony Jackson, Lancashire

'Out of 3DO, Jaguar and CD32, help me choose the right system.'

P Ball, Croydon



on CD. As I see it, we are on the brink of the greatest advancement in 'our' industry.

I cannot recall such enthusiasm, caution, disappointment and general ignorance all rolled into one ever before.

Come on software publishers, it seems as though you are blaming us – the consumers – for the apparent flop of CD technology. Take a step back and then reconsider. Ever since the dawn of the potential of CD gaming we have been promised cheaper, better quality products. But so far, where are they?

It's not that good games are no longer being produced. Rather, the software giants are running scared from a sign saying 'Vacancies – CD band wagon, space still available'. If floppy disks are piratable, STOP PRODUCING THEM! and invest in CD technology and CD games before you are left behind...

James Grant, Somerset

It's not just floppy disks that are an endangered species, remember. Software developers want to see the end of

cartridges, because they are too expensive and take too long to make, plus they have a history of tyrannical control on the part of the hardware licensers, Sega and Nintendo, who publishers feel take too big a cut.

CD-based systems will be 'open' to licence-free development, and so, though the hardware will cost us more, we won't have to pay so much for games.

If 3DO succeeds in becoming the industry standard for CD-based games, it can only be a bad thing. If it were to happen that all new machines were 3DO compatible, nobody would ever try anything new, which ultimately would slow down progress in games technology.

Peter North, Barnes

Not going to happen. As you can already see, 3DO faces severe competition before it starts, from Jaguar, Amiga CD^{32} and possibly the Nintendo/SGI 'Project Reality' – if it actually exists. Price is the big factor – Jaguar delivers a 3DO-standard spec for $200 rather than $700, while Commodore are quite convinced that no-one can do a CD-based console cheaper than theirs.

People are saying that the Mega CD is doomed, but they seem to forget that the first ground-breaking games for the Mega Drive, such as *Sonic*, did not appear until a year or more after its release.

As for CD games not being any different from normal games – all I can say is, have you been in an arcade recently? All the machines are *SF II* clones, so there's hardly much originality going on there, either.

Paul Clifton, Swindon

The Mega CD is beginning to look like a patch-together of different technologies. When you consider that a Mega Drive/CD combination costs £370 in Dixons and for that you get a machine with relative display and speed limitations in comparison to the cheaper Amiga CD^{32}, you have to admit the competition is hotting up.

But Sega have a big market presence, and better Mega CD stuff is now just starting to appear. Who knows?

Congratulations on producing such an excellent magazine! This sort of publication has been a long time coming, with the newsagents' shelves crammed full of magazines which seem to be written by children for children.

Stephen Brealey, Beeston

Steve Jarratt is actually only thirteen years old. He just looks ancient. Hur Hur.

I have to admit I was quite impressed with **Edge** one – after all, how many magazines tell you what fonts they use?

I like the way you give us all the technical data for forthcoming releases as opposed to the game plots. You also cover the frame rate of games, an aspect which, although counted by many as a trainspotter's hobby, is in fact a very important aspect of any leisure title, simply because it shows how smooth, fast and playable the game is going to be.

Fifty frames per second (aka 50fps or 50Hz) is incredibly fast and smooth – play a game with this frame rate and you're in for a great time. However, you need a very fast 68030 (as used in the Sega coin-ops) or '040 (as used in the Amiga 4000) to make games which contain a high level of detail run at 50fps.

I'm not talking about platform games, here – most of these run at 50fps anyway – but 3D vector games, which are infinitely more realistic. 20fps is good but not mind-blowing (see *Starwing*), while 30fps is impressive for a high-detail simulation (see *Virtua Racing*). Anything around 10fps is quite unplayable, but once you're over the 40fps barrier, expect jaws to drop all round.

Nathan White, Walsall

Much rubbish is talked about frame rates. Okay, they can be important, and the ideal rate for UK players is 50Hz – because that's the refresh rate of a PAL monitor (TV is half as much).

But bear this in mind – the classic Disney movies had animation running at just 24fps and the vast majority of cartoon animation that's carried out today, whether for TV or the movies, runs at half that – just 12 frames a second.

It's all a question of horses for courses.



'Edge simply takes the piss out of its competitors, it's that good...'

Lars Janssen, East Sussex

'The price is justified by the sheer amount of information found in your magazine and I hope you will be able to keep this quality for many years to come.'

Kin Wai Kam, Manchester

Give yourselves a big slap on the back for the production of an excellent adult journal. The presentation is eye-catching and has a real quality feel. Good to see you haven't bogged down Edge with hints and tips. Videogaming publishing comes of age.

Richard De Silva

The question of whether or not the Amiga CD^{32} is a success definitely hinges not on the machine itself, but on the support of the software houses and the strength of their games.

I quickly got myself an A1200 at the beginning of the year because of what it could potentially offer in gaming terms, yet eight months or so later I'm still waiting for some 1200-exclusive games, not just 1200-adapted versions of existing titles. My point is that if the CD^{32} is to succeed, it depends on establishing a strong software base immediately and offering a stunning game as part of a Commodore package.

This is something the A1200 never had, and still doesn't have.

Martin Wellbelove, Attleborough

Indeed, but is that not true for all new systems? It's a truism nowadays that the success of a new piece of hardware depends entirely on the quality of the software released for it, and all the manufacturers protest that their machines will have not only quality games but also a wide range of titles.

Commodore claim that 90 titles will be ready for the CD^{32} by Christmas, but in fact many of these are old CDTV discs which are not worth considering. That leaves around 30 up-to-date titles which **Edge** would expect to see actually onsale.

When you look at the potential quality of these, there are a number that promise to mix excellent graphics with excellent gameplay, but there is a heavy bias in the direction of platform games with the likes of *Putty 2* and *James Pond 3*.

Three games are finished as **Edge** goes to press on September 14th, and these are *Pinball Fantasies*, *James Pond 2 – Robocod* and *Diggers*. The latter is the game which will be bundled with the CD^{32}, though the first machines which went onsale in Rumbelows stores on September 5th included no discs to play on the machine – making it a rather expensive doorstop!

Too much technology could cause a downfall in hardware demand, I believe. Companies like Sega and Nintendo are pushing themselves too hard on producing the most

Continued next page

viewpoint

mindbending machines, but what I am worried about is that newer machines like 3DO and the forthcoming Jaguar will eventually ruin the market.

There will be no enthusiasm when we see a new game even though it has a great intro, great graphics and great sound, because the consumer of the future will have seen it all before – 'Been there, done that!'

Slow down, rest easy and let games catch up a little with the ever-changing face of the machines. As they say in the Sega ads, welcome to the next level!

Kin Wai Kam, Manchester

Point one is that machines will always be ahead of the games and it always takes an age for developers to make the best use of the technology. Amiga games were reaching their peak in 1992 five full years after the release of the A500 – now they have to do it all again with the new AGA chip standard.

Point two is that real advances in games design and technology – genuine milestones – don't happen very often. You'd have to start with the early coin-ops of 1981-2, then the first home computer classics like *Revs* and *Elite* in 1984-5. After that, you're limited to a few major advances such as the point-and-click control of *Dungeon Master* and the texture-mapped 3D in *Ultima Underworld*.

The latest technology has the potential to bring further, major advances in playing environments, and playing styles, but it could still be some way off happening.



Okay it's a 3DO player – but is it an American or a European model? See question below

Will an American 3DO machine work on a British TV or is it worth waiting for the British release? Also, will the titles be the same on both sides of the Atlantic?

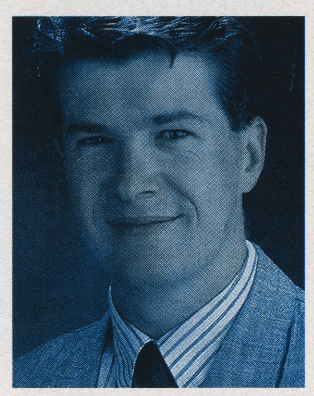
Robert Anthany, Tamworth

First off, Edge correspondents please note that there is now a separate section to deal with your questions about gaming hardware and software – Q&A – and it's over there on the right. Please address all your questions there from now on.

Right, on with the question. Indeed, an American NTSC 3DO will not work with a British PAL TV and so a conversion will definitely be necessary.

But no doubt someone will do an unofficial job on an imported machine.

3DO have not said what plans they have for a PAL version, but it should be easy enough for them to include a PAL conversion feature inside the machine with no serious detrimental effect on the picture quality.



Darryl Still, Atari UK's marketing manager, with a few words of caution (below)

You want opinions? You got 'em.

The magazine looks great, well-designed, good quality, nice layout, adult journalism (mostly). The computer mag grows up!

BUT I find myself worrying that you have immediately adopted the same fawning attitude to the new boys as many other sectors of the industry. I hoped you would start with a clear vision, but...

Some examples? Bloody 'eck. You have forced me to defend Commodore!

Your articles on ourselves (Atari) and Commodore displayed a commendable balance against each other, but compared to your 3DO coverage??

Have you asked yourself why you can list such a mixed bag of history for these two companies? Simply because we have been there, done it and invented the T-Shirt. 3DO do not have a history (some even question if they have a product!), so they cannot be reviled for their failures (yet), but to keep a balance, neither can they be applauded for any successes.

Atari VCS to ST, or in Commodore's case C64 to Amiga, prove both companies have a considerable track record in the massmarket and therefore are better placed to do so again! The benefits of experience are essential, and we are confident – warts and all – that Atari is the most likely company to make Jaguar roar.

I would also like to take umbrage with your mention of the Falcon. This cannot be compared with CDTV. Falcon is not a lowcost massmarket computer, it is a specialist application-based home computer retailing at over £500. In point of fact, the only system available when the CTW research was done was a £1,000 hard disk system so 12% is excellent!

Please note that Falcon is being stocked in over 80% of independent UK music stores! Some 'failure' eh? We are delighted with Falcon's performance so far and believe this machine has a big future.

So, to sum up, **Edge** shows potential, but, like 3DO and any other new kid on the block, respect for the elders of the tribe is essential if you are not to get your ear clipped from time to time. Talk to us, we are past present and future in one happy package!!

Darryl Still
Marketing Manager, Atari UK

If Edge has been guilty of applauding 3DO to the detriment of established companies like Atari and Commodore, why have we received letters telling us not to be so negative about it?

The 3DO feature in **Edge** one was a far call from the sycophantic approach videogame magazines usually adopt, and unearthed just as much dirt about the company's hype and promotion of 3DO as anything else. If Trip Hawkins fails to find a market for his 3DO machine you won't see any red faces around here.

'After reading 30 pages of techview my own 'Direct Memory Access Engine' was proving to be a few megabytes short of requirement...'

Danny Somers, Wetherby

'The reviews section seems a bit pointless, as most people will buy a magazine that deals with their own machine for games reviews.'

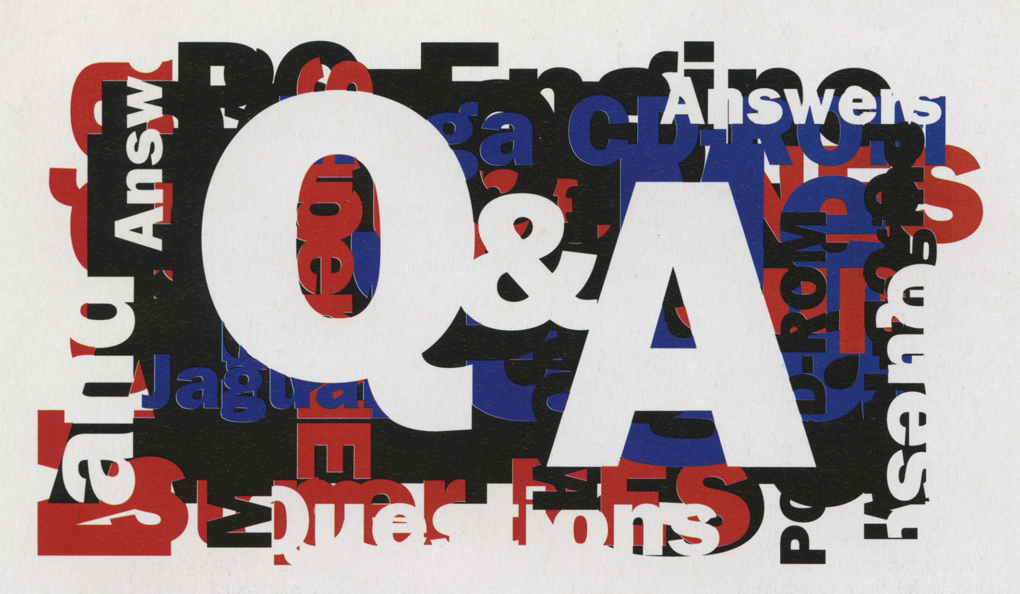
Ross Davidson, Southampton

'Concentrate on the future, inside information, and so on. Anyone can review games...'

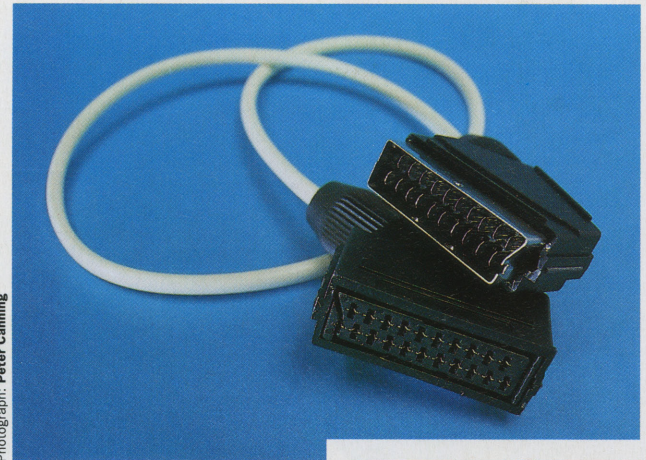
Dave Thyer, Bristol

'Continue to focus heavily on the CD hardware as this is where the market is going.'

Nik Smith, Hornchurch



Do you have a question, technical or otherwise, about videogames or games hardware? If so, get in touch, **Edge** has all the answers...

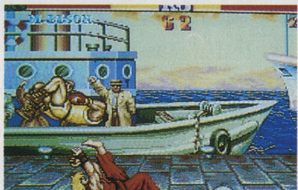


Photograph: Peter Canning

Q You seem to have got excellent quality pictures of the PC Engine games in **Edge** one. How have you managed this, because on mine the screen display always looks murky and dull?

Robert Smith, Cardiff

A What you need is a Colour Booster. This is a SCART cable with built-in picture-enhancing circuitry, which you should be able to get from anywhere that sells imported PC Engine gear. It costs £15-£25. The problem is that the Engine is not designed for an RGB display signal, and no-one has yet found a way of converting it internally.



The PC Engine Colour Booster (top) gives a clear display, as shown in this shot from PC-E *Street Fighter II CE* (above)

Q What's MPEG and how does it function?

Murray Middleton

A MPEG stands for the Motion Picture Expert Group. This is a research body set up by all the major electronics firms to devise a standard for digital video.

The problem with digital video, where each frame of video is stored as data, is that it needs fifty frames to be supplied to the TV every second and a CD can not supply data quickly enough. The answer is to compress the data and use chips to decompress it before it is displayed. The compression technique involves storing just the changes from one frame to the next, rather than the whole of every frame.

The MPEG I standard is a set of chips which does this compression and decompression, and the chipset can be bought by any manufacturer that wishes to use it. MPEG I will be known as VideoCD when it goes on sale. The chips were finished in April this year and are expected to go onsale first as addons for Amiga CD32 and Philips CD-i. Similar addons will also be available for any CD audio player that has the right kind of output.

Q In **Edge** one you said that it will be possible to actually watch films from a Philips CD-i machine using the FMV upgrade cartridge, but standard CDs can only hold about 70 minutes of film. Would you have to purchase two CDs to watch one film, and would this make it more expensive?

David Magni, Farnborough

A Yes, films will come on two CDs sold as a pack. We don't have a definite price yet, but the best guesses reckon about the price of a double CD album, £16 or so. Philips Interactive Media have already agreed the release of a total of 50 films by Christmas, but of course these will also run on any MPEG I-equipped CD machine.

Q I understand that if I converted my UK Super NES to 60Hz, it would run at full speed with no borders, reproducing the same quality display as a SCART system. Is that right? In other words, can a PAL system be converted so that it can reproduce a SCART system? If I used my UK SNES with a Philips CM8833II monitor, will the graphics be in the same league as a SCART machine on a SCART TV?

Ken Ng, Tooting

A You're mixing up two different things. First of all, NTSC is the American and Japanese TV system, (60 frames per second), while PAL is the European system, running at a slower 50 frames per second. The idea of converting your SNES is that it speeds it up and takes out a slightly botched-up system of conversion to PAL, but it really doesn't make a big difference.

SCART is just a standard TV connector. The main advantage of a SCART connector is that it can supply an RGB signal, composed of separate red, green and blue information. Other connector use a composite signal, which mixes up the red, green and blue and so gives slightly less quality.

A monitor will always give a better picture than a TV, because monitors have a higher screen resolution and a faster refresh rate (50Hz).

Q and A

Most gamers, at one time or another, have come across a technical problem that they can't solve, or a pressing query with no-one to answer it. This is where Edge comes in...

Simply jot your problem down and send it to: Q&A, Edge, 30 Monmouth Street, Bath, Avon BA1 2BW. Alternatively, fax us on 0225 446019, or e-mail us via astorer@cix.compulink.co.uk.

Edge will do all it can to provide a solution in the next issue of the magazine.

Sorry, we can't answer queries over the phone and personal replies are not possible – even if you do enclosed an sae.

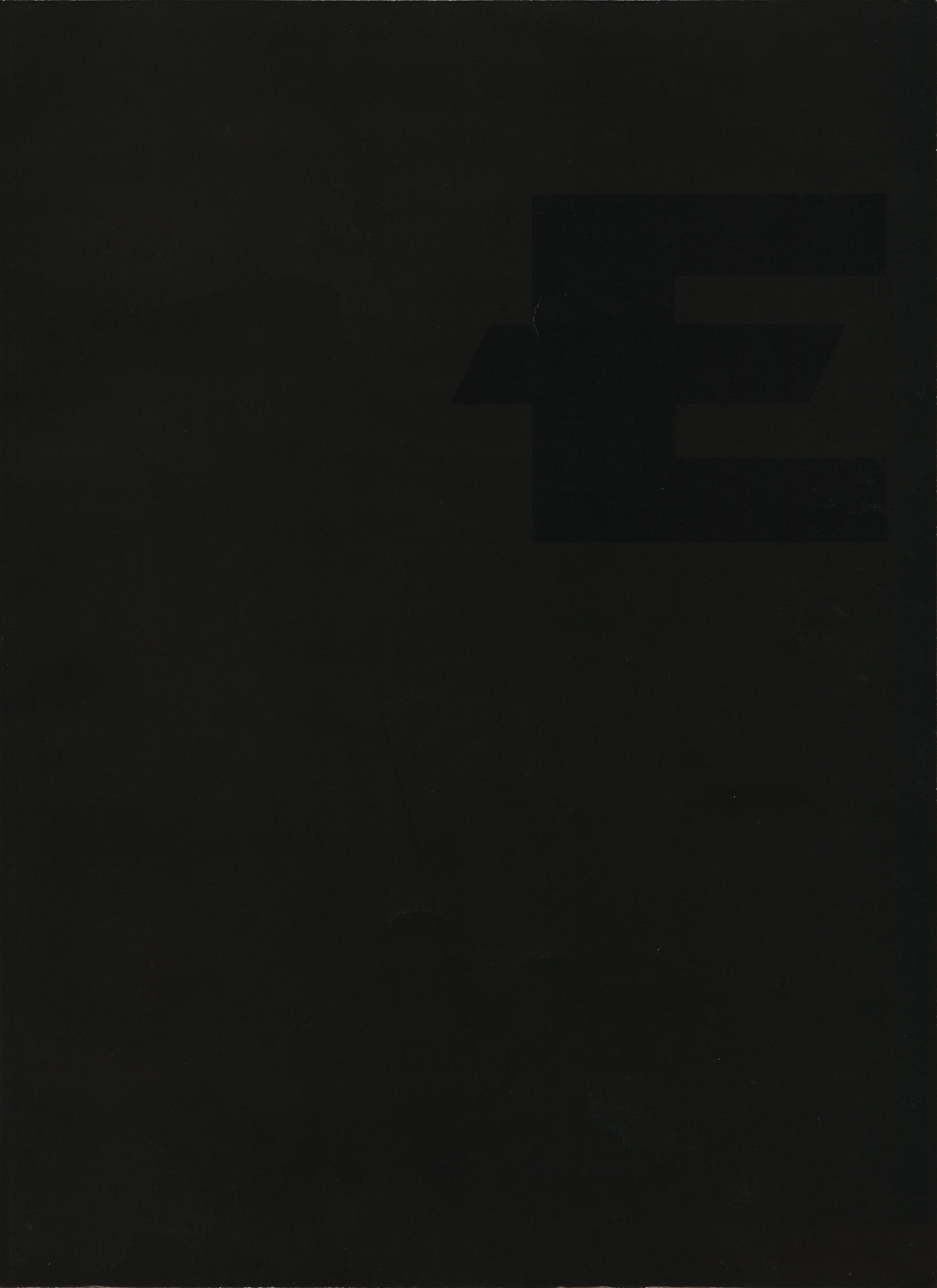
over the edge

Next month



EDGE 3

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